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## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

December 21, 2007

Mr. Guy Donaldson  
Chief, Air Planning Section  
U.S. Environmental Protection Agency – Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733

Re: Early Action Compact (EAC) Milestones

Dear Mr. Donaldson:

This is in response to the November 16, 2007, letter from Mr. Diggs requesting information related to two milestones for the Early Action Compact (EAC) areas of Austin, Northeast Texas, and San Antonio. In his letter, Mr. Diggs requests (1) certified 2007 eight-hour ozone ambient air monitoring data and (2) a report that all applicable control measures have been implemented through December 2007.

The letter specifically requests that eight-hour ozone data through October 31, 2007, for all three EAC areas be certified and entered into the Environmental Protection Agency's (EPA) Air Quality System (AQS) by December 31, 2007. These 2007 data are currently in the process of being validated according to EPA's AQS protocol by the Texas Commission on Environmental Quality (TCEQ), as specified by 40 Code of Federal Regulations Part 58. Normally, these data would be entered into the AQS by the end of March 2008. Per Mr. Diggs' request, staff is attempting to expedite the work which may allow validated data through October 2007 to be entered sooner, but it may not occur until the end of January 2008. In the interim, please refer to [http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr\\_attainment.pl](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_attainment.pl) for the most current ozone data for the EAC areas. Preliminary data show that all three Texas EAC areas are in attainment of the standard. Data for 2005 and 2006 were previously certified by the TCEQ's Monitoring Operations Division.

Mr. Diggs also requests an "EAC milestone report" for each of the areas, explaining that all applicable control measures have continued to be implemented through December 2007. All state measures in the SIP revision for each of the three areas have been, and will continue to be, implemented throughout the term of the compact. For information regarding the implementation of local measures, please refer to the semi-annual reports submitted by the respective local governments of each EAC area. The final EAC semi-annual reports are not due until December 31, 2007. However, a draft version of the Alamo Area Council of Governments' final semi-annual report for the San Antonio EAC area is available at <http://www.aacog.com/CAP/eacsemiannualreports/eacsemiannualreports.asp>. Draft versions of the reports are expected to be available soon for the Austin and Northeast Texas areas, and notification will be provided to you when they are available.

Mr. Guy Donaldson

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December 20, 2007

Re: Early Action Compact (EAC) Milestones

In summary, validated eight-hour ozone data through October 2007 for the Texas EAC areas will be entered into the AQS by March 2008 and semi-annual reports containing information regarding the implementation of control measures in the areas should be delivered to the TCEQ and the EPA by December 31, 2007. If you have any questions, please contact Walker Williamson of the State Implementation Plan (SIP) Team at (512) 239-3181.

Sincerely,

A handwritten signature in cursive script, appearing to read "TP Pella".

Theresa Pella  
Section Manager  
Air Quality Planning

TP/WW/sy

cc: Ms. Cathy Stephens, Capital Area MPO  
Mr. Jim Mathews, Northeast Texas Air Care  
Mr. Peter Bella, Alamo Area Council of Governments

# **10<sup>th</sup> Semi-Annual Report: The Early Action Compact for the San Antonio Region**

**December 2007**

**Prepared by the Alamo Area Council of Governments**

**This document was provided for initial review by the public and the Air Improvement Resources (AIR) Technical Committee on November 13, 2007.**

**The document was approved by the AIR Technical Committee on November 13, 2007 and by the AIR Executive/Advisory Committees on December 5, 2007.**

**Final Document Due On or Before December 31, 2007**



<b>Title:</b> 10 <sup>th</sup> Semi-Annual Report: The Early Action Compact for the San Antonio Region		<b>Report Date:</b> December 31, 2007
<b>Authors:</b> Donna Hessong and the AACOG Natural Resources/Transportation Department		<b>Type of Report:</b> Semi-Annual or Biannual Report
<b>Performing Organization Name and Address:</b> Alamo Area Council of Governments 8700 Tesoro Drive, Suite 700 San Antonio, TX 78217		<b>Period Covered:</b> July 2007 – December 2007
<b>Sponsoring Agencies Name &amp; Address:</b> San Antonio – Bexar County Metropolitan Planning Organization, 1021 San Pedro, San Antonio, TX 78212 Texas Commission on Environmental Quality, 12100 Park 35 Circle, Austin, TX 78753		<b>Approved by:</b> AIR Executive/Advisory Committees, San Antonio, Texas
<b>Abstract:</b> Protocol for the Early Action Compact (EAC) stipulates that areas participating in the compact will assess and report their progress against milestones every six months. This report contains the progress made towards the required milestones for the San Antonio EAC region (SAER) from July 2007 through December 2007. Several milestones were accomplished during this timeframe. Emission Inventory (EI) and modeling milestones include completion of the 2005 EI, emissions trending results, and Conceptual Model updates. Progress of the Alamo Clean Air Partnership, Clean Cities, Green Patrol, and the Transportation Emissions Reductions Measures (TERMs) projects met milestones for voluntary and State Implementation Plan (SIP) credit control strategies for the San Antonio region. Additional public outreach efforts include media related services, presentations, events, and the distribution of outreach materials. Maintenance of growth and air quality planning milestones were met in the SAER by continued efforts in emissions assessments and analysis of new strategy requirements, such as additional emissions reduction measures and continued air quality planning in the wake of the EAC. Attached to this report are appendices for Outreach Efforts and TERMS projects.		
<b>Related Reports:</b> 2 <sup>nd</sup> - 9 <sup>th</sup> Semi-Annual Reports: The Early Action Compact for the San Antonio Region	<b>Distribution Statement:</b>	<b>Permanent File:</b> The Natural Resources / Transportation Department of the Alamo Area Council of Governments



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Charissa Barnes  
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Christina Castaño

## Executive Summary

The Alamo Area Council of Governments (AACOG) Staff, stakeholders within the region, and elected officials are pleased to announce that the **San Antonio region is in attainment of the federal 8-hour ozone standard** according to the preliminary measurements by TCEQ.<sup>1</sup> For the current three-year designation period, the region has recorded 4<sup>th</sup> highest values of 86, 87, and 74 ppb, averaging 82 ppb (design value), a testament of the success of the San Antonio Early Action Compact (EAC). This document fulfills EAC requirement of semi-annual progress reporting and contains the accomplishments for the tenth and final semi-annual period (July through December 2007), for the San Antonio EAC region.

Emissions Inventory (EI) progress for the reporting period includes completion of the 2005 EI (as required for emissions trend analysis) and an updated Emissions Trend Analysis. With the inclusion of the 2005 EI data, the region continues to show declining emissions trends, with declines projected through 2012.

Modeling progress included photochemical model base case updates for geocoded 2005 EI data and Conceptual Model update. In meeting this milestone, emissions were also projected to 2007 and 2012, according to Environmental Protection Agency (EPA) approved methodologies. These emissions included area, nonroad, and military sources. The San Antonio Conceptual Model was updated to include 2006 meteorological and ozone season data. The model presents the June 2006 high ozone episode as the most desirable candidate. AACOG in coordination with Texas Commission on Environmental Quality (TCEQ), is pursuing the development of a modeling episode for June 2006 period.

Continued progress of control strategies creditable within a State Implementation Plan (SIP) context includes: progress in the Texas Emissions Reduction Plan (TERP) and Transportation Emission Reduction Measures (TERMs) projects. TCEQ is currently considering applications in the San Antonio region for TERP project grant money, following the TERP fiscal year (FY) 2007 2<sup>nd</sup> round application period. The completion dates for TERMs projects were updated, or added where applicable, by AACOG staff. Substitution projects were selected to meet the SIP credit for TERMs projects not completed by December 31, 2007. These substitutes consist of projects that were not on the original list approved for SIP credit; estimated emissions reductions are equal or greater than reductions of the uncompleted projects.

Voluntary control strategy development continues with progress marked by the Alamo Area Clean Cities (AACC) program, Green Patrol program, and the Alamo Clean Air Partnership (ACAP) program. AACOG staff conducted a Compressed Natural Gas (CNG) workshop in February. On July 26<sup>th</sup> an *Advancing the Choice* event was held to explore compressed natural gas (CNG) fleet expansion. In October, the *Alamo Area Biodiesel Workshop* was held to discuss options available for stakeholders to expand the biodiesel infrastructure.

AACOG staff continued to promote the Green Patrol program. This year the program has 179 parents and teachers currently pledged to refrain from idling their vehicle engines in the schoolyard. Camelot Elementary kicked-off their Green Patrol on October 29, 2007. AACOG outreach staff continued to actively seek new partners for participation in the ACAP program. The partnership list now includes 24 local entities dedicated to improving air quality in the San

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<sup>1</sup> Texas Commission on Environmental Quality (TCEQ), Four Highest Eight-Hour Ozone Concentrations in 2007 as of December 17. Available online: [http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr\\_4highest.pl](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_4highest.pl). Last accessed December 17, 2007.

Antonio region. The *Give Air Pollution the Sack* campaign encourages employees to bring their lunch or walk to lunch if eating out.

Public involvement and outreach continues to be an important component of the San Antonio regional Clean Air Plan. On July 13<sup>th</sup>, AACOG staff hosted *Fresh Air Friday*, an air quality event held at Milam Park in downtown San Antonio. In addition, the Commute Solutions program now features the web-based matching system, for more efficient match turnaround.

The San Antonio region has successfully maintained steady progress in accomplishing EAC milestones from July to December 2007, ensuring proper development of the Clean Air Plan.

## Chapter 1 – Introduction

The Early Action Compact protocol is designed to guide development and implementation of control strategies, including planning for near-term growth, in order to achieve and maintain the 8-hour ozone standard. This compact offers a timeline with a more rapid timeframe for achieving emission reductions than the United States Environmental Protection Agency (EPA) 8-hour implementation rulemaking,<sup>2</sup> while providing "fail-safe" provisions for the area to revert to traditional nonattainment processes if specific milestones are not met. The EAC agreement signed by the EPA, the Texas Commission on Environmental Quality (TCEQ), and local elected officials is available online at: <http://www.aacog.com/cap/>.

As required by EAC guidance, areas participating in early voluntary 8-hour air quality plans must assess and report their progress in achieving EAC milestones in a regular, public process every six months. This document will fulfill the requirement for the tenth semi-annual progress report written for the San Antonio EAC.

The milestones in this report which are described in the EAC are:

- Completion of and updates to emissions inventories as outlined in section b), Emissions Inventory;
- Completion of and updates to modeling as outlined in section c), Modeling;
- Post-attainment demonstration and plan updates as outlined in section e), Maintenance for Growth;
- Continued public involvement in the planning process which will be conducted as outlined in section f), Public Involvement. This is in addition to the public reporting conducted at least once every six months, as outlined above.

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<sup>2</sup> Federal Register / Vol. 68, No. 105 / Monday, June 2, 2003 / Proposed Rules; 40 CFR Part 51; Proposed Rule To Implement the 8-Hour Ozone National Ambient Air Quality Standard; see "2. What Is the 'Early Action Compact' for Implementing the 8-Hour Ozone NAAQS," page 32859. Available online: <http://www.epa.gov/fedrgstr/EPA-AIR/2003/June/Day-02/a13240.pdf>





## Chapter 2 – Early Action Compact Milestones

The Early Action Compact (EAC) specifies milestone requirements and delivery dates based on the EAC Memorandum of Agreement (MOA).<sup>3</sup> The milestones are addressed in the sections that follow.

### 2.1 Emissions Trend Analysis Milestones

The ongoing analysis of emissions in the San Antonio EAC Region (SAER) is an essential element in the maintenance of the Emissions Trend Analysis milestone of the Clean Air Plan. AACOG staff completed development of the 2005 Emissions Inventory (EI), which was then utilized in the development of a 2007 Emissions Trend Analysis for the SAER.<sup>4</sup> The National Emission Trend (NET) EIs, included in the analysis, were the 1996, 1999, 2002, and 2005 for the SAER. The projected inventories included 2007 and 2012 emission inventories for the SAER.

#### 2.1.1 2005 NET EI Results

The results of the 2005 NET EI are listed in Tables 1 and 2 by source category. On-road sources are a primary contributor of VOC and NO<sub>x</sub> anthropogenic emissions. In Bexar County for example, on-road sources generate 90.29 tons of NO<sub>x</sub> emissions on a typical ozone summer day. The next highest contribution comes from point sources with 55.84 tons per day, followed by non-road sources, area sources, and military/airport sources. With regards to anthropogenic VOC emissions, area sources produce 45.31 tons per typical ozone season day, while on-road sources produce 40.80 tons per day, non-road sources generate 16.61 tons per day, point sources produce 4.74 tons per day, and airport / military sources generate 2.35 tons.

Table 1. 2005 VOC Emissions by Source Category (Tons/Day for Average Ozone Weekday)

Category	Bexar	Comal	Guadalupe	Wilson	Total
On-Road	40.8	3.4	3.3	1.0	48.5
Non-Road	16.6	3.3	1.4	0.3	21.6
Point	4.7	0.4	0.9	0.0	6.0
Airport/Military	2.4	0.0	0.1	0.0	2.4
Area	45.3	3.7	7.0	3.4	59.3
Biogenic	63.6	42.0	38.8	48.4	192.8
Total	173.4	52.8	51.4	53.0	330.7

Table 2. 2005 NO<sub>x</sub> Emissions by Source Category (Tons/Day for Average Ozone Weekday)

Category	Bexar	Comal	Guadalupe	Wilson	Total
On-Road	90.3	9.1	8.3	1.8	109.5
Non-Road	23.4	3.9	3.3	0.4	31.0
Point	55.8	11.2	3.1	0.0	70.1
Airport/Military	4.4	0.0	0.0	0.0	4.4
Area	11.2	0.8	2.6	1.0	15.5
Biogenic	3.7	1.6	3.0	3.9	12.2
Total	188.9	26.6	20.2	7.1	242.8

<sup>3</sup> Chapter V. Early Action Compact Memorandum of Agreement (MOA); available online:

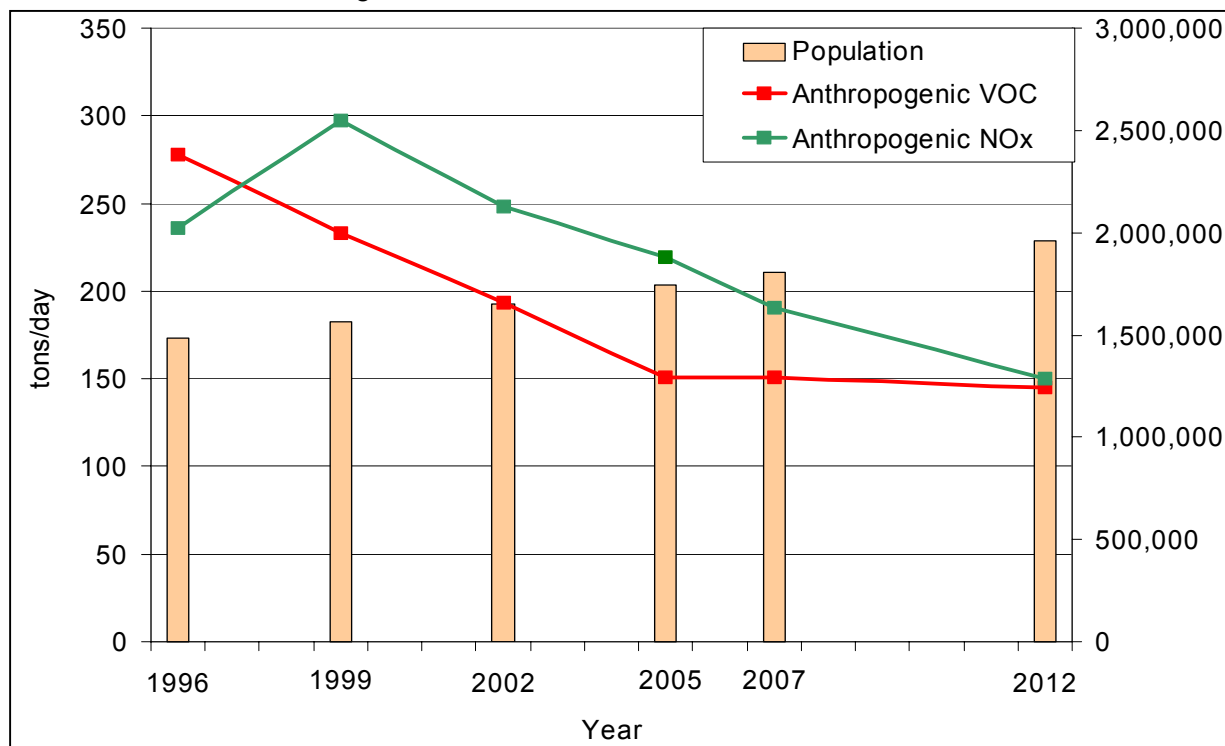
<http://www.aacog.com/cap/CAP2002.html#5>

<sup>4</sup> AACOG, 2007. Emissions Trend Analysis for the San Antonio Early Action Compact Region: 1996, 1999, 2002, 2005, 2007, & 2012. San Antonio, TX.

### 2.1.2 Emissions Trend Findings

An updated emissions trend analysis was performed to include the 2005 EI data along with the updated 2007 and 2012 projections. Total emissions results are listed by year in Figure 1 and by EAC County in Table 3. The NO<sub>x</sub> emissions continue to show decline, as does the VOC; however, the VOC emissions level out after 2005. A positive aspect of the emissions trend analysis is that emissions continue to show a declining trend while population in the region continues to increase at a steady rate.

Figure 1: VOC and NO<sub>x</sub> Emissions Trend Lines and Population Estimates for the 4-County EAC Region: 1996, 1999, 2002, 2005, 2007, & 2012



From 1996 to 2012, VOC and NO<sub>x</sub> emission totals decrease in all four EAC counties, overall. In addition, from 1999 through 2005, NET EI data progresses along a steady declining trend for both VOC and NO<sub>x</sub>. When projected out to 2007 and 2012, both VOC and NO<sub>x</sub> emissions continue to decrease; however, VOC emissions start to level out due to population increases. On-road and nonroad category emissions had the greatest reductions due to legislative mandates lowering emissions from engines and fuels.

The San Antonio region is anticipated to remain in attainment of the 85 ppb federal ozone standard in the maintenance year of 2012.

Table 3. Anthropogenic Emissions Trend within the San Antonio 4-County Region (tons/day)<sup>5</sup>

San Antonio Region		1996		1999		2002		2005		2007		2012	
		VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
Area Sources	Bexar	78.3	2.4	75.6	4.7	69.7	6.1	48.0	11.2	49.8	11.2	53.3	11.5
	Comal	4.4	0.1	3.7	1.1	4.3	0.5	3.6	0.8	3.8	0.8	4.1	0.7
	Guadalupe	6.1	0.3	5.4	2.6	12.6	2.0	6.7	2.6	6.8	2.7	7.1	2.7
	Wilson	2.6	0.4	2.8	2.0	5.9	1.5	3.1	1.0	3.2	1.0	3.5	1.0
	Total	91.4	3.3	87.5	10.5	92.5	10.0	61.4	15.6	63.7	15.6	68.1	15.9
Point Sources	Bexar	7.0	64.3	6.3	83.9	4.8	55.7	4.7	55.8	11.0	36.1	15.3	32.2
	Comal	0.4	8.2	0.5	12.2	0.3	11.4	0.4	11.2	0.5	12.7	0.5	15.4
	Guadalupe	0.4	0.3	0.5	0.5	0.7	4.0	0.9	3.1	0.6	4.8	0.9	3.1
	Wilson	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0
	Total	7.7	72.8	7.3	96.6	6.0	71.1	6.0	70.1	12.0	53.6	17.1	57.2
On Road Sources	Bexar	94.6	95.7	82.1	121.9	51.8	103.0	50.2	80.8	45.5	69.1	33.7	41.4
	Comal	6.0	8.6	6.2	11.7	4.3	11.0	4.2	8.3	3.9	7.1	3.0	4.3
	Guadalupe	6.7	11.5	5.6	10.5	4.1	9.8	3.8	7.6	3.4	6.5	2.6	3.9
	Wilson	1.7	2.5	1.6	1.9	1.2	1.9	1.1	1.6	1.0	1.3	0.8	0.8
	Total	109.0	118.3	95.4	145.9	61.4	125.7	59.2	98.2	53.7	84.0	40.1	50.4
Non Road Sources	Bexar	50.9	22.1	33.4	26.1	26.0	28.2	16.6	23.5	14.2	22.2	12.4	18.5
	Comal	10.1	4.6	2.7	3.0	3.9	4.1	3.3	3.9	3.3	3.6	3.0	3.0
	Guadalupe	4.3	4.2	2.4	4.6	2.3	4.1	1.4	3.3	1.2	3.0	1.1	2.5
	Wilson	1.4	3.9	1.4	0.8	0.7	0.9	0.3	0.4	0.3	0.4	0.2	0.3
	Total	66.6	34.7	39.8	34.5	32.9	37.3	21.6	31.1	19.0	29.1	16.7	24.3
Airport/Military Sources	Bexar	3.1	7.2	3.4	9.8	2.8	4.4	2.4	4.4	2.3	5.1	2.4	5.5
	Comal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Guadalupe	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.1	0.0
	Wilson	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total	3.1	7.2	3.5	9.8	2.9	4.5	2.4	4.4	2.4	5.1	2.4	5.5
Total Emissions	Bexar	233.9	191.7	200.8	246.4	155.2	197.3	121.9	175.7	117.1	147.7	107.1	113.6
	Comal	20.8	21.4	13.0	28.0	12.9	27.0	11.6	24.2	11.4	27.2	10.8	23.7
	Guadalupe	17.5	16.3	13.8	18.2	19.7	19.9	12.7	16.6	12.1	16.9	11.4	10.0
	Wilson	5.7	6.8	5.8	4.7	7.8	4.4	4.4	2.9	4.5	2.7	4.5	2.2
	Total	277.9	236.3	233.4	297.3	195.7	248.5	150.6	219.4	150.9	187.5	144.4	146.9

<sup>5</sup> *Ibid.*

## 2.2 Modeling Milestones

The photochemical model is a valuable tool available to air quality planners interested in understanding and reducing ground-level ozone concentrations. The photochemical model is a computer simulation of the formation and movement of ground-level ozone. Performing on-going modeling updates ensures that planners have the most accurate modeling data required for air quality planning activities. These updates may come in the form of refinements to past emissions inventories, creation of new emissions inventories for more recent years than the inventories used in past episodes, and continuing updates to the Conceptual Model.

### 2.2.1 Photochemical Model Updates

The 1999 photochemical model base case updates include the geo-coding of 2005 EI emissions (completed prior to July 2007) and updates to the 2007 and 2012 projected EIs. The EI was projected to 2007 and 2012 to predict future ozone design values using the following models to develop growth factors:

- On-Road – MOBILE 6.2
- Point Source – EGAS model
- Area Sources – EGAS model
- Nonroad Sources – NONROAD2005 Model

#### June 2006 Photochemical Modeling Episode

AACOG will conduct an RFP for contract on the development of meteorological files for the San Antonio area during the high ozone period of May 29 – July 3, 2006. These files will be used in conjunction with the meteorological data for the Dallas/Ft. Worth and Houston/Galveston models, currently being developed by TCEQ for SIP requirements, for the development of a June 2006 photochemical modeling episode.

The new episode will enable more accurate model results for ozone prediction and the testing of control strategies. In addition, for future San Antonio region SIP development, having more than one modeling episode is recommended to reflect varying conditions during which high ozone occurs.

### 2.2.2 Emissions Control Strategy Modeling & Analysis

The AIR Technical committee requested that additional emissions control strategies be analyzed for possible reductions of 8-hr average ozone levels in the SAER. The San Antonio region remains proactive in this endeavor. Currently, staff is in the process of reviewing the TCEQ control strategy master list<sup>6</sup> and other sources for possible strategies that could be effective in the San Antonio region.

### 2.2.3 Conceptual Model Development

A conceptual model profiles or typifies the conditions in which high ozone levels occur for a region through the study of the meteorology, seasonal variables, and regional influences, accompanying high levels of ozone. From this data, episodes are designated as possible modeling candidates that could be incorporated into a photochemical model for control strategy evaluation. The Conceptual Model for the San Antonio region was updated to include the 2006

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<sup>6</sup> Environ, August 2006. Review of Emission Reduction Control Strategies for Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOCs) for the North Central Texas Ozone Nonattainment Area: Appendix A. Novato, CA. Available online: [http://www.tceq.state.tx.us/assets/public/implementation/air/sip/dfw/dfw\\_ad\\_sip\\_2007/appendices/2006013SIPNR\\_App\\_L\\_Environ\\_Report\\_03.28.07.pdf](http://www.tceq.state.tx.us/assets/public/implementation/air/sip/dfw/dfw_ad_sip_2007/appendices/2006013SIPNR_App_L_Environ_Report_03.28.07.pdf)

meteorological and ozone data. Following the end of the 2007 ozone season, the model will be updated again to include the 2007 data

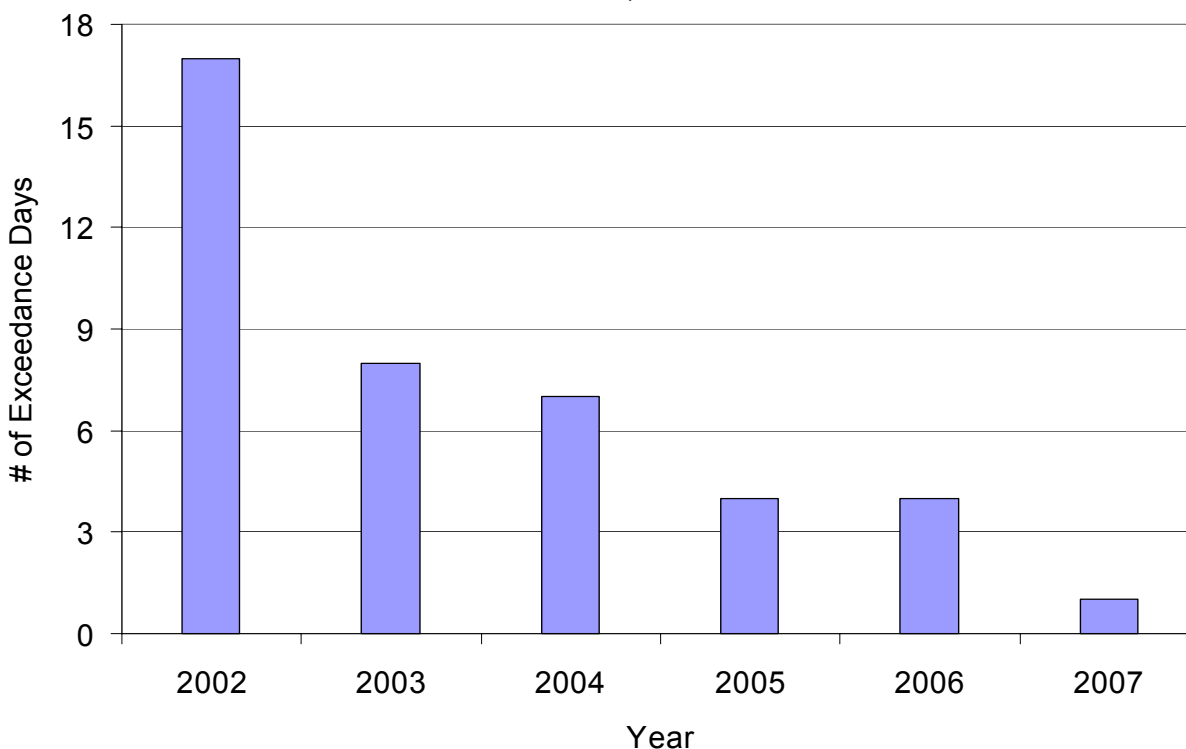
#### 2006 & 2007 Exceedance Days

Exceedance Days are days on which the ozone concentration reaches 85 ppb for an 8-hour average. There were four days in 2006 and only one in 2007 where an exceedance level was recorded at a regulatory monitor in the SAER. Table 4 lists these days. Figure 2 shows the declining annual total number of these days since 2002 and the forming of the EAC.

Table 4. 2006-2007 Ozone Exceedance Days and Possible Modeling Episodes

Date	Day of Week	1 Hour	8 Hour	Multiple Exceedance Days	Notes
06/13/06	T	104	93	June 13-14 June 28-29	Potential candidate
06/14/06	W	94	90		
06/28/06	W	97	87		
06/29/06	Th	94	91		
09/21/07	F	103	85		

Figure 2. Number of Days with 8-hr Ozone Averages  $\geq 85$  ppb by year for San Antonio, 2002 - 2007



#### Results

Table 5 contains the resulting candidates for modeling as determined through the Conceptual Model analysis. The June 2006 candidate is the better candidate, of the of the two listed as the "best episode candidates," and currently under consideration as a second photochemical modeling episode for the San Antonio region.

Table 5. Conceptual Model Episode Summary

Best Episode Candidates	<ul style="list-style-type: none"> <li>▪ <b>Characteristics of special Interest (bold font)</b></li> <li>▪ Undesirable Characteristics (normal font)</li> <li>▪ <i>Very undesirable Characteristics (bold italic font)</i></li> </ul>
May 29 – July 2, 2006	<ul style="list-style-type: none"> <li>▪ <b>Reduced cost due to TCEQ Dallas/Fort Worth SIP modeling episode development; aside from sharing the cost with TCEQ, the Austin region may consider also developing a new episode as the NAAQS ozone threshold may decrease, bringing Austin into violation</b></li> <li>▪ <b>Contains 8 days at C23 and 13 days at C58 &gt; 70 ppb</b></li> <li>▪ <b>Contains 2 days at C23 and 4 days at C58 ≥ 85 ppb</b></li> <li>▪ <b>Falls within the most recent year under consideration</b></li> <li>▪ Contains high values on 14<sup>th</sup> &amp; 29<sup>th</sup> observed v. predicted correlation with trend line test; this is due to maintained levels of ozone close to the 1-hr high for those days</li> <li>▪ <i>TS/TD Alberto on 11-14<sup>th</sup>, frontal movement on 2, 13, &amp; 24<sup>th</sup></i></li> <li>▪ <b>Does not contain a weekend exceedance</b></li> </ul>
June 11 – 29, 2002	<ul style="list-style-type: none"> <li>▪ <b>Reduced cost if done in coordination with the Austin or other region</b></li> <li>▪ <b>Contains 8 days at C23 and 8 days at C58 &gt; 70 ppb</b></li> <li>▪ <b>Contains 6 days at C23 and 5 days at C58 ≥ 85 ppb</b></li> <li>▪ Only a Fair correlation to trend line (Observed – Predicted) due to a fair correlation on the 17<sup>th</sup>, a weak correlation on the 18<sup>th</sup>, and a poor correlation on the 23<sup>rd</sup></li> <li>▪ 1-hr spike on the 24<sup>th</sup></li> <li>▪ Only 67% of exceedance days are ± 10 ppb of the weighted design value</li> <li>▪ <i>Frontal movement on 14-15<sup>th</sup> and rain on 29<sup>th</sup> (0.35 in.) &amp; 30<sup>th</sup> (1.09 in.)</i></li> <li>▪ <i>Falls within the oldest year with episodes under consideration</i></li> </ul>
Weaker Episode Candidates	<ul style="list-style-type: none"> <li>▪ <b>Characteristics of special Interest (bold font)</b></li> <li>▪ Undesirable Characteristics (normal font)</li> <li>▪ <i>Very undesirable Characteristics (bold italic font)</i></li> </ul>
July 29 – August 17, 2004	<ul style="list-style-type: none"> <li>▪ <b>Contains 4 days at C23 and 11 days at C58 &gt; 70 ppb</b></li> <li>▪ <b>Contains 2 days at C23 and 3 days at C58 ≥ 85 ppb</b></li> <li>▪ <b>83% of exceedance days are ± 10 ppb of the weighted design value</b></li> <li>▪ Only a Fair correlation to trend line due to high one-hour values</li> <li>▪ Light rains: 1<sup>st</sup>, 6<sup>th</sup>, &amp; 7<sup>th</sup></li> <li>▪ <i>TS Bonnie (11<sup>th</sup>)</i></li> </ul>
August 27 – September 5, 2002	<ul style="list-style-type: none"> <li>▪ <b>100% of exceedance days are ± 10 ppb of the weighted design value</b></li> <li>▪ <b>Contains 5 days at C23 and 3 days at C58 &gt; 70 ppb</b></li> <li>▪ <b>Contains 2 days at C23 and 1 days at C58 ≥ 85 ppb</b></li> <li>▪ Only 2 exceedance days in the episode</li> <li>▪ <i>Rain on the 29<sup>th</sup> (1.54 in.)</i></li> <li>▪ <i>Does not contain days of the week typical to occurrences of ozone exceedance days (no Monday)</i></li> <li>▪ <i>Weak correlation with trend line for Aug. 31<sup>st</sup> &amp; only a fair correlation on the 30<sup>th</sup></i></li> </ul>

## 2.3 Control Strategy Development Milestones

Enforceable state control strategies were put in place under the Early Action Compact at the request of local elected officials. The regional leadership is interested in ensuring that the greatest emissions reductions available through these measures are obtained. Efforts continue to verify that SIP creditable strategies are implemented as stated within the SIP.

In addition to control measures for which SIP credit can be obtained, **voluntary strategies** are also promoted and implemented in the San Antonio region. AACOG staff continues to encourage the adoption of voluntary measures through such programs as Commute Solutions, Clean Cities, and the Alamo Clean Air Partnership.

### 2.3.1 Alamo Area Clean Cities

Through the Alamo Area Clean Cities (AACC) program, technical and outreach assistance is provided for alternative fuels and Clean Cities technologies (fuel blends, idle reduction



technologies, hybrids, and fuel economy) to fleet operators in the San Antonio Early Action Compact Region.

#### Compressed Natural Gas Fleet Expansion

A Clean Cities "Advancing the Choice" event was held on July 26th to explore further partnerships within the Alamo Area Clean Cities program. The event focused on natural gas uses in medium and heavy-duty vehicles. Sponsors included Cummins/Westport, Emission Solutions, Inc., Clean Energy, Trillium, NGV America, and Opus Kane. The event included speakers from the Texas General Land Office, AACOG, Cummins Westport, Emission Solutions, Public Solutions Group, DFW Airport, Mansfield ISD, the City of Lake Jackson, and the City of San Antonio. The keynote address was delivered by Bexar County Commissioner Tommy Adkisson. The goal of this event was to explore the creation of additional natural gas fleets and refueling infrastructure following the City of San Antonio's proactive decision to replace a portion of their diesel-powered refuse truck fleet with CNG models.

In August, AACOG began discussions with Clean Energy, Emission Solutions, Inc., and Silver Eagle Distributors regarding a natural gas project for a new Silver Eagle delivery fleet in San Antonio.

#### Hybrid Taxi Fleet in San Antonio

The City of San Antonio (COSA) created an ordinance for the hybrid taxi program that was adopted by the City Council on May 17, 2007. The voluntary program will allow taxi fleets and owners to replace each non-hybrid taxi with two permits good only for a hybrid vehicle. The maximum number of hybrid taxi permits is limited to 52 permits annually. To date, 8 cab companies have received permits for hybrid taxis, with 26 total permits issued. These cab companies include:

- Star Co-op
- Quality Taxi Co-op
- SA Executive
- Royal Co-op
- 7-Eleven
- AAA Taxi Service
- Excel
- Yellow Cab Company

The City's hybrid taxi program will be recognized as a partner in the TCEQ "Texas Green & Go" program. Plans continue for marketing and promoting the program at a recognition ceremony. The Texas Green & Go Partnership seeks to promote the benefits of efficient, lower-emitting hybrid-electric vehicles for taxi fleets and to increase public awareness of hybrid-electric vehicles as a cleaner alternative to a 100% petroleum-fueled, internal combustion engine vehicle. The Texas Green & Go Partnership is a project developed by TCEQ Commissioner Larry R. Soward.

#### Alamo Area Biodiesel Initiative

On October 18, AACOG hosted the "Alamo Area Biodiesel Workshop" and Clean Cities Stakeholder meeting. The Alamo Area Biodiesel Workshop was held to invite stakeholders and other interested parties to become involved in the discussion of how area stakeholders can actively pursue opportunities to expand the Biodiesel infrastructure and market in the San Antonio region. Forty-three persons attended the workshop and representatives of the City of San Antonio, AACOG, TCEQ, Austin Biofuels, Midtex Oil, Lackland Air Force Base, Texas Department of Agriculture, and USDA made presentations. The workshop was intended to be



the first step in bringing together the necessary persons/agencies to create partnerships intended to promote a community-based, sustainable Biodiesel market in the AACOG region. Additional meeting/ workshops will be held as necessary by AACOG staff to promote this process and initiative.

### 2.3.2 Clean School Bus Program

AACOG staff promotes and coordinates the Clean School Bus program; a cooperative partnership established to aid school districts in replacing their aging school bus fleets with new “clean fuel” buses. Achieving this goal requires educating school districts and corporations about the benefits of replacing older diesel buses with lower emission “clean fuel” buses. Efforts to reduce school bus emissions could also involve the combination of replacing and retrofitting buses with new technology to achieve NOx and PM reductions and the possible use of low-sulfur fuel.

The Clean School Bus program was previously titled the “Adopt-A-School Bus” (AASB) Program and funded by a grant from the Texas State Energy Conservation Office. As of August 31, 2007 the AASB program grant expired. However, AACOG staff continues to promote the goals of the program and has begun to use the Clean School Bus program title to mirror the name of the US EPA’s Clean School Bus program. The following paragraphs indicate the continued support and promotion of the program by AACOG staff.

### US EPA, Blue Skyways Collaborative Grant Opportunity

On September 21, AACOG submitted a grant application in response to the Request for Proposals from the U.S. EPA Region 6 & 7, Blue Skyways Collaborative Clean School Bus USA Program. The application describes “The Alamo Area Clean School Bus Project,” which involves four Independent School Districts located in the twelve-county region of South-Central Texas serviced by the Alamo Area Council of Governments. The Project consists of school bus replacements at the Edgewood Independent School District (ISD) and at Hunt ISD. Additionally, there will be a school bus retrofit project at the Boerne and Harlandale ISDs.

### Green Patrol

Green Patrol arose from the Adopt A School Bus program and is an idle reduction project that encourages parents and bus drivers to refrain from idling their vehicle engines for extended periods while dropping off and picking up school students. An assessment of the Camelot Elementary pilot program run last school year, was conducted to determine the success of the project. Since the program inception, 179 parents and teachers have taken a pledge to refrain from idling their vehicle engines and idling has been reduced by 74%. Four of the classes at Camelot received or exceeded the goal of 80% parent participation.

Camelot Elementary kicked-off their Green Patrol program for the 2007-2008 school year on October 28<sup>th</sup>. Participating parents received Green Patrol stickers and battery-powered hand-fans to keep cool while their AC was not running.

### 2.3.3 Alamo Clean Air Partnership

The Alamo Clean Air Partnership (ACAP) program encourages voluntary emission reduction measures among the business and government sectors of the San Antonio region. Air pollution reduction measures implemented by current partners include a wide range of on-road, non-road, and point source strategies.

### Work with Business Organizations

Between July and December 2007, staff continued to work with business associations to distribute information regarding air quality in the San Antonio region and measures local organizations and industries may adopt to reduce their emissions. These associations included the Greater San Antonio Chamber of Commerce, the Texas Independent Automotive Association, and the San Antonio Manufacturer's Association (SAMA). In addition, staff collaborated with TCEQ Region 13's Small Business group on occasions where their expertise was useful for providing emission reduction information to specific sources.

### New ACAP Member

ACAP welcomed its newest member – Edible Arrangements – to the program in October 2007. The company of ten employees operates delivery vans throughout the City of San Antonio. The local franchise owners are committed to running a *green* company and have extended their environmental commitments to air quality by adopting such policies as postponing refueling operations until after 6:00 pm and offering employees off-peak work schedules. Information about ACAP and its members are listed on the AACOG web site.<sup>7</sup>

### Take Out Air Pollution Campaign

Staff continues to market the Take Out Air Pollution campaign to area businesses and organizations. During the second half of 2007, a new message was added to the campaign *Give Air Pollution the Sack*. The message will be used to encourage employees to eat in or walk to lunch rather than drive to a restaurant.

Analyses conducted using the San Antonio photochemical model indicated that on-road emissions generated during the lunch hour contributed to ozone formation to a greater extent than emissions generated during the morning and afternoon rush hours. Therefore, the campaign will focus on limiting lunchtime commutes. The *Give Air Pollution the Sack* messages (right) will be distributed through employer environmental or health fairs, employer newsletters, and outreach materials such as flyers and posters.

### ACAP Membership

As of fall 2007, the ACAP membership includes:

- H-E-B Grocery Company
- City of San Antonio
- Raba-Kistner Consultants, Inc.
- San Antonio Water System
- USAA
- Valero Energy Corporation
- Alamo Area Council of Governments
- Edible Arrangements

### Honorary 2007 ACAP Members (participants in the Walk&Roll Corporate Challenge)

- Harlandale ISD
- San Antonio-Bexar County Metropolitan Planning Organization
- San Antonio College
- San Antonio Express-News



<sup>7</sup> Available online: <http://www.aacog.com/CAP/default.asp>

- Texas Department of Transportation, San Antonio District
- University of Texas at San Antonio
- CPS Energy
- VIA Metropolitan Transit
- Joven
- Bexar County
- Palo Alto College
- San Antonio Police Department
- Archdiocese of San Antonio
- Cemex
- AGUA/GEAA
- Trinity University

#### Supporting Organizations

- The Greater San Antonio Chamber of Commerce
- The San Antonio Hispanic Chamber of Commerce

#### 2.3.4 Texas Emission Reduction Plan (TERP)

When the State Implementation Plan created under the Early Action Compact was finalized in 2004, local elected officials requested a 2-ton per day (tpd) reduction of NO<sub>x</sub> emissions in the 4-county SAER through Texas Emissions Reduction Plan<sup>8</sup> (TERP) projects implemented locally. With the addition of projects up to and including the FY 2005 TERP 2<sup>nd</sup> round projects, the amount of NO<sub>x</sub> estimated reductions exceeded the targeted 2 tpd by 0.14 tpd in the San Antonio region.<sup>9</sup>

AACOG staff continues to vigorously promote TERP. On April 2, 2007, TCEQ opened the FY 2007 2<sup>nd</sup> round TERP applications to include the San Antonio area for the first time since the FY 2005 TERP 2<sup>nd</sup> round. The TERP application process closed June 1, 2007.

#### 2.3.5 Transportation Emission Reduction Measures (TERMs)

TERMs projects include projects listed on the San Antonio/Bexar County Metropolitan Planning Organization's Transportation Improvement Program (TIP) and projects sponsored by local governments that are not federally funded. The projects, which qualify as TERMS projects, aim to reduce congestion and/or the number of trips made by vehicles, ultimately improving the air quality by reducing emissions. These projects have completion dates scheduled from 1999 through 2007.

However, completion of some TERMS projects is not anticipated by Dec. 2007. Projects such as these have progressed slowly due to external influences (changes in construction plans, delays due to abnormally frequent rain days, etc.). The EPA has accounted for these external influences by allowing substitute projects to replace the slower moving ones. Substitute projects are projects that were not on the original list approved for SIP credit, scheduled for completion prior to Dec. 31, 2007, and of equal or greater estimated emissions reductions. The estimated reductions from substitute projects are listed in Table 6.

<sup>8</sup> <http://www.tceq.state.tx.us/implementation/air/terp/>

<sup>9</sup> As documented in AACOG's Seventh Semi-Annual report for the San Antonio EAC region, June 30, 2006, page 13. Online: [http://www.aacog.com/CAP/eacsemiannualreports/063006\\_7th\\_SemiAnnual-AACOG.pdf](http://www.aacog.com/CAP/eacsemiannualreports/063006_7th_SemiAnnual-AACOG.pdf)

Table 6. Substitute TERMS Emission Reductions Necessary to Meet SIP Credit

Item Analyzed	VOC (lbs/day)	NOx (lbs/day)
SIP Credit Given for TERMS	1,839.16	649.31
Reductions – Completed Projects	1,705.37	599.18
<b><i>Additional Reductions Required – Substitute Projects</i></b>	<b><i>133.79</i></b>	<b><i>50.13</i></b>

#### Substitute Projects

In addition to a recently open and operational ramp at US 281 and Loop 410 interchange, two ramps at the I-10/410 exchange and two IdleAire facilities in Bexar and Comal counties were calculated for substitute emissions reductions. The I-10/410 ramps completed in 2005 and account for 25.16 lbs/day VOC and 7.69 lbs/day NOx. The 281/410 ramp accounts for 23.26 lbs/day VOC and 11.92 lbs/day NOx. Only VOC reductions (47.07 lbs/day) could be claimed for credit for the IdleAire facility in Comal County, as the NOx reductions were already claimed through the TERP program.

The emissions reductions calculated for the IdleAire facility in Bexar County exceeded the remaining VOC and NOx reductions needed to meet the SIP credit given for TERMS projected in the San Antonio region. Thus, only a portion of the VOCs and NOx reductions was used for substitution. Of the 39.23 lbs/day VOC reductions, 38.30 lbs/day VOC is indicated for substitution to meet the TERMS credit; only 30.52 lbs/day NOx reductions was needed of the 125.15 lbs/day to meet the NOx TERMS credit, from the Bexar County IdleAire facility.

Table 7 lists the preliminary substitute projects with completion dates and estimated emissions reductions. However, in addition to these projects, there are a number of projects completed with associated reductions that also qualify for credit, should a project for some reason not be accepted for substitution; these projects are listed in Appendix B as “Back-up Projects” on the Excel tab and “Additional Projects” on the page header.

Table 7. Substitute TERMS within San Antonio Region, 2007

Type	Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow (Ramp)	US 281	SB US 281	WB IH 410	2007	23.26	11.92
Traffic Flow (Ramp)	IH-10	WB IH-410	WB IH-10	2005	17.08	5.22
Traffic Flow (Ramp)	IH-10	WB IH-410	EB IH-10	2005	8.08	2.47
Truck Stop Electrification	Comal County	N/A	IH-35 N	2006	47.07	N/A*
Truck Stop Electrification	Foster Rd (Bexar County)	N/A	IH-10 E	2004	38.30	30.52
<b><i>Total</i></b>					<b><i>133.79</i></b>	<b><i>50.13</i></b>

\*Only VOC reductions can be claimed for credit, since this is a TERP program and credit for NOx reductions has already been given to the San Antonio region in the SIP document.

#### Emissions for IdleAire Facilities

The following procedure was used to calculate emissions benefits of truck stop electrification via IdleAire facilities, based on EPA anti-idling methodology<sup>10</sup> and collaboration with TCEQ staff. This methodology is also similar to The Texas Guide to Accepted Mobile Source Emission Reduction Strategies (MOSERS) handbook to calculate “the reduction in idling exhaust emissions from reduced time spent in idling.”<sup>11</sup>

<sup>10</sup> EPA, January 2004. Guidance for Quantifying and Using Long Duration Truck Idling Emission Reductions in State Implementation Plans and Transportation Conformity.

<sup>11</sup> Texas Transportation Institute, August 2007, The Texas Guide to Accepted Mobile Source Emission

Sample Calculation: Foster Road Facility, Bexar County

Information on the annual hourly usage rate for the Foster Road facility system was provided by the IdleAire Technologies Corporation. The Service Delivery Modules at TA, Foster Road, had an annual total of 156,482.20 hours of use in 2005.<sup>12</sup> The following equation was used to calculate the average usage rate of the IdleAire technology per day by parking space.

Equation (1)

$$\text{Daily Usage Rate} = \text{AHU} / \text{DAY} / \text{PS}$$

Where,

AHU = annual hourly utilization

DAY = number of days/year

PS = parking spaces

$$\begin{aligned} \text{Foster Rd Daily Usage Rate} &= 156,482.20 \text{ hours/year} / 365 \text{ days/year} / 60 \text{ spaces} \\ &= 7.15 \text{ hr/day/space} \end{aligned}$$

AACOG staff used the Foster Rd usage rate to calculate diesel engine emissions reductions from anti-idling technologies. The IdleAire technology reduces emission by at least 98%.<sup>13</sup> The anti-idling device usage results in shifting of energy sources from diesel engines to the power grid;<sup>14</sup> this may cause a minor increase in energy production at power plants.

EPA methodology recommends a NOx emission factor (EF) of 135 grams per hour for Class 8 diesel idling;<sup>15</sup> however, the EPA does not state an EF for calculating VOC emissions from diesel idling. AACOG staff, in collaboration with TCEQ, determined an EF of 42.3 grams of VOC per hour, for use in diesel idling emissions calculations. This EF was calculated by Chris Kite of TCEQ based on the results of an exhaust emissions test (performed at both low and high engine speeds) of five Class 8 trucks.<sup>16</sup>

Sample Calculation: Foster Road Facility, Bexar County

The following equation was used to calculate daily diesel emissions reductions due to anti-idling technology usage.

Equation (2)

$$\text{Emissions Reductions (VOC/NOx)} = \text{EF g/hr} * \text{UR h/day} * \text{PS} * \text{RE} / 907,184 \text{ g/ton}$$

Where,

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Reduction Strategies, 2<sup>nd</sup> Edition, p. B.12.4. Available online: <http://moser.tamu.edu/>

<sup>12</sup> Email from Kenneth Carter of IdleAire; to Isabel Martinez, AACOG staff; Dated: March 03, 2006.

<sup>13</sup> Carol Doty, April 28, 2004, Advanced Travel Center Electrification for National Transportation Idle Free Corridors. IdleAire Technologies Corporation, p. 9. Available online:

<http://www.epa.gov/SmartwayLogistics/presentations/ideaire-042804.pdf>

<sup>14</sup> Washington State University Extension Energy Program, Idling Restrictions, page 2, available online:

<http://www.energy.wsu.edu/documents/renewables/IdlingRestrictions.pdf>

<sup>15</sup> EPA, January 2004. Guidance for Quantifying and Using Long Duration Truck Idling Emission Reductions in State Implementation Plans and Transportation Conformity, Available online:

<http://www.southeastdiesel.org/Photos/Library/OnHigh/truck%20idling%20guidance.pdf>

<sup>16</sup> Society of Automotive Engineers (SAE), 2003. Particulate Matter and Aldehyde Emissions from Idling Heavy-Duty Diesel Trucks, (2003-01-0289). Available online at:

<http://www.epa.gov/smartway/documents/pmteststudy.pdf>



EF = emission factor (VOC = 42.3 and NO<sub>x</sub> = 135)  
 UR = utilization rate (7.15 h/day/space)  
 PS = parking spaces (60 or 72)  
 RE = rate of emission reduction effectiveness (0.98)

NO<sub>x</sub> Emissions Reductions = 135 g/hr \* 7.15 hr/day \* 60 \* 0.98 / 907,184 g/ton  
 = 0.063 ton/day \* 2,000 lbs/ton  
 = 125.13 lbs/day

#### IdleAire Emissions Calculations Results

The annual emissions reductions associated with the use of IdleAire technology at the TravelCenters of America (TA) truck stop (# 147) at Foster Road are 22.84 tons NO<sub>x</sub> and 7.16 tons VOC; at the TA truck stop (# 232) in Comal County, the VOC reduction is 8.59 tons/year. The following table (8) lists the emissions reductions at the two IdleAire facilities.

Table 8. IdleAire Technology Usage Emissions Reductions, San Antonio Region

County	Location	IdleAire Parking Space	VOC		NO <sub>x</sub>	
			tons/yr	lbs/day	tons/yr	lbs/day
Comal	TA Truck Stop, Conrads Rd / I-35, New Braunfels	72	8.59	47.07	27.40	150.14
Bexar	TA Travel Center, Foster Rd / IH-10, San Antonio	60	7.16	39.23	22.84	125.15
Total		132	15.75	86.30	50.24	275.29

## **2.4 Maintenance for Growth Milestones**

Assurance of the air quality situation in Maintenance Year 2012 is a vital aspect of the ongoing planning activities by stakeholders in the EAC for the San Antonio region. Accomplishing this milestone is essential and would indicate that the efforts of the stakeholders in the SAER were successful. With the ending of the EAC, planning efforts of this milestone requirement have lead to attainment of the ozone standard. However, the San Antonio region will remain proactive in maintaining attainment by continued planning efforts in 2008. Currently, the region is considering the development of an O<sub>3</sub> Flex Plan as part of continued planning efforts.

## **2.5 Public Involvement Milestones**

Educating the public about the importance of the region's air quality continues to be a crucial effort for the Clean Air Plan. Outreach and education efforts continue within the SAER, often through partnerships with other governmental entities and industrial leaders in the area. As the Clean Air Plan is developed, citizens and citizen groups are given the opportunity to be involved in the Clean Air Plan development process.

### 2.5.1 Media

During the second half of 2007, AACOG partnered with a number of agencies and companies to conduct press conferences that focused on issues such as Air Quality in the San Antonio area, the Walk&Roll Challenge, and alternative commuting (e.g., carpooling, riding the bus, and walking). Between July and December 2007, AACOG issued 5 press releases, 2 public service announcements, held 2 press conferences, and contributed 4 *Region* (AACOG electronic newsletter distributed to the 12-county region) articles, regarding air quality issues. Air quality outreach materials were also distributed at media-sponsored health events.

#### Air Quality Education Via Media

Local media aired public service announcements promoting Fresh Air Friday 2007 as well as a 4 taped television interviews, one live television interview, and 5 radio interviews focusing on air quality and transportation related topics.

#### Air Quality Health Alert (AQHA) Program

AACOG ensures the AQHA program is broadcast to as large an audience as possible by working with media partners to distribute AQHA announcements by television, radio, newspaper, media websites, and TransGuide traffic signs. In addition, AACOG staff continues to promote AQHA awareness through the sale of AQHA banners, AQHI index education, and AQHA notification system.

#### Clean Air Gauge

To help educate the public on the San Antonio attainment status, the Outreach Staff developed the Clean Air Gauge. This Gauge highlights the fourth highest 8-hour ozone average, encouraging people to stay out of the RED ZONE—non-attainment. The gauge is posted on many city and partnering agency websites. In July, the cleanairdrive.com website recorded 95,903 hits, which is up from only 266 in April, an increase of 35,953%! The outreach staff contributes this drastic jump in number of hits, in part, to the postings of and willingness to promote the Clean Air Gauge by partnering agencies.

#### 2.5.2 Other Outreach Efforts

Non-media related outreach efforts continue. From January through June 2007, a number of governmental, private, business, school, and/or civic group presentations were provided as listed in Appendix A. Such events allow AACOG staff to inform citizens on how everyday actions contribute to air pollution and how alternate methods of doing the same tasks can help reduce emissions.

#### Walk&Roll Challenges

The Walk&Roll Corporate Challenge was held during the month of June. The conclusion of the challenge was announced and the winners recognized at the Fresh Air Friday event. The Walk&Roll Challenge, held for the general public, was increased from 1 month, October, to the 4 months of July – October this year, to encourage SOV reductions throughout the remainder of the ozone season. AACOG staff estimated over one ton of air pollution was removed this season through the Walk&Roll Challenge program!

#### Fresh Air Friday

On July 13, 2007, AACOG hosted Fresh Air Friday at Milam Park, the first event of it's kind, serving as an educational opportunity for the downtown public and platform to announce the 2007 Walk&Roll Corporate Challenge winners. A press conference was held, during the event, with representatives from the MPO, Bexar County, VIA and AACOG speaking on behalf of air quality and alternative transportation choices. Bexar County Commissioner Tommy Adkisson presented the Corporate Challenge trophies to our first and second place winners, TxDOT and USAA respectively. About one hundred individuals attended Fresh Air Friday and fourteen businesses and organizations participated.

### Commute Solutions Program

The Commute Solutions program is designed to reduce the number of single occupancy vehicles (SOVs) by promoting alternative forms of transportation, such as RideSharing (carpooling, vanpooling, & SchoolPooling), Bike Buddies, and Walking School Bus (WSB).

In July 2007, AACOG staff, along with the Capital Area Metropolitan Planning Organization staff, launched a new web-based matching system for the Commute Solutions program, to be used over the next 4-years. The system will serve matching needs for the San Antonio, New Braunfels, San Marcos, and Austin areas, providing a faster and more efficient rideshare match turnaround. The base module went live the first week of July, with additional features added by the end of August. VIA Tansit completed the vanpool management module this past November. This component not only forms new vanpools, but conducts vanpool matching, adding vanpools with available seats to the rideshare matching pool.

In addition to participants requesting individual matching, organizations have the opportunity to request matching for their members. Below is the current list of organizations participating in the program's RideShare matching services. The names in ***italic bold*** indicate those that have made requests for matches within the July – December 2007 reporting period.

#### ***Carpooling:***

- CPS Energy
- Northwest Vista College
- ***Bexar County***
- ***AACOG***
- Standard Aero
- First Health
- ***Lackland AFB***
- ***Randolph AFB***
- ***San Antonio Water System (SAWS)***
- ***City of San Antonio (COSA)***
- ***USAA***
- ***Valero***
- ***Express News***
- ***Harcourt***
- ***TxDOT***

#### ***SchoolPool & Walking School Bus ("WSB" indicates both programs active at location):***

- Northeast School of Arts
- International School of the Americas
- San Antonio PREP & EDGE (summer only)
- Candlewood Elementary (WSB)
- Evers Elementary (WSB)
- Encino Park Elementary (WSB)
- Bush Middle School

Appendix C contains an in depth review of the public education and outreach activities occurring during the course of the EAC, 2003 – 2007.



### 2.5.3 Public Meetings/Clean Air Plan Workshops

In accordance with the EAC, the public has opportunities to participate with the ongoing development of the Clean Air plan in order to familiarize themselves with the process and goals of the project. The regularly scheduled bi-monthly meetings of the AIR Executive Committee, the planning committee for air quality planning under the Early Action Compact in the San Antonio region, are open to the public and always have a Citizens to Be Heard agenda item. Additional exposure to the project is expressly provided to the public through other meetings and workshops. The following meetings were scheduled for the six-month timeframe of this report:

- 08/22/2007 – AIR Executive Committee
- ~~10/31/2007 – AIR Executive Committee (cancelled)~~
- 12/05/2007 – AIR Executive Committee

## Chapter 3 – Conclusion

The San Antonio EAC region has successfully maintained steady progress in accomplishing EAC milestones and ensuring proper development of the Clean Air Plan. Completion of the milestones included appropriate participation of stakeholders in the air quality planning process, ongoing development and research of potential control strategies (to include voluntary strategies), provisions for public participation in the development of the Clean Air Plan, and continued development of technical activities and testing of model performance. Accomplishing these milestones allowed efficient development of the Attainment Demonstration and enhanced confidence in the validity of its technical data. The San Antonio EAC region remains compliant with the prescribed milestones as given by the *Protocol for Early Action Compacts Designed to Achieve and Maintain the 8-Hour Ozone Standard*.<sup>17</sup>

This report completes the requirements prescribed within the EAC protocol mentioned above. With the conclusion of the EAC, the San Antonio region will continue efforts to reduce ozone precursor emissions, model ozone predictions, and explore emission reduction control strategies.

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<sup>17</sup> The "Protocol for Early Action Compacts Designed to Achieve and Maintain the 8-Hour Ozone Standard" is available online as [http://www.epa.gov/ttn/naaqs/ozone/eac/20020619\\_eac\\_protocol.pdf](http://www.epa.gov/ttn/naaqs/ozone/eac/20020619_eac_protocol.pdf)

## 2007 Air Quality Outreach & Education

### 1. Television

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
Taped Interview	Air Quality	KHCE Channel 23 Brenda Williams, AACOG	7/10/07	General Public
Taped Interview	Air Quality	KPXL, Show #20 Brenda Williams, AACOG	7/17/07	General Public
Interview	Air Quality	JT Street, Fox 29 News (LIVE) Peter Bella, AACOG	8/14/07	General Public
Interview	Air Quality Status	KENS 5 Brenda Williams, AACOG	8/14/07	General Public
Interview	Transportation issues/Commute Solutions	Sharon Denny/KHCE Amber Mayne, AACOG	10/2/2007	General Public

### 2. Radio

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
PSA	Fresh Air Friday	Amber Mayne, AACOG KONO	7/6/2007	General Public
PSA	Fresh Air Friday	Amber Mayne, AACOG KISS	7/6/2007	General Public
Interview	Air Quality	Virginia Lovelady, KZEP 104.5 Andrew Hudgins, AACOG	7/17/2007	General Public
Interview	Keeping the air Clean	Jessica Dunlap, KWED Heather Wildden, AACOG	7/31/2007	General Public
Interview	TCEQ warns against ozone quality	Cindy, KWED Heather Wildden, AACOG	8/14/2007	General Public
Interview	Air Quality	Bud Little, WOAI Peter Bella, AACOG	8/14/2007	General Public
Interview	Air Quality Health Health Alert	Dave Rampsey, KTSA Brenda Williams, AACOG	9/20/2007	General Public

### 3. Newspaper & Internet

Source	Title of article	Contact Persons w/Organizations	Date	Target Audience
Newspaper	<a href="#">Rain may stave off pollution sanctions</a>	Anton Caputo, SA Express-News Peter Bella, AACOG	7/1/2007	General Public
Online News	<a href="#">Walk &amp; Roll Corporate Challenge (Fresh Air Friday)</a>	Leland A. Outz, Special to the Express-News Heather Wildden, AACOG	7/13/2007	General Public
Blog	<a href="#">Breathing a little easier</a>	Pat Driscoll, San Antonio Express-News Heather Wildden, AACOG	7/16/2007	General Public
Blog	<a href="#">PAC Palominos serving the Community</a>	Vincent Bosquez, Palo Alto College Heather Wildden, AACOG	7/16/2007	PAC
Magazine	Air Quality	Ray Lankford, SA Scene Monthly Magazine Peter Bella, AACOG Andrew Hudgins, AACOG	7/17/2007	General Public
Newspaper	<a href="#">Concientizan sobre contaminación ambiental</a>	Indra Castro, La Prensa Heather Wildden, AACOG	7/18/2007	General Public
Newspaper	Air Quality	Alex Asbury, Construction News Brenda Williams, AACOG	7/20/2007	Construction
Newspaper	Keeping the air Clean	Jessica Dunlap, Seguin Daily News Heather Wildden, AACOG	7/31/2007	General Public
Online News	Keeping the air Clean	Jessica Dunlap, SeguinToday.com Heather Wildden, AACOG	7/31/2007	General Public
Newspaper	TCEQ warns against ozone quality	Cindy, KWED Heather Wildden, AACOG	8/14/2007	General Public
Online News	TCEQ warns against ozone quality	Cindy, KWED Heather Wildden, AACOG	8/14/2007	General Public
Interview	???	Peter Bella, AACOG Express News	11/??/07	General Public

### 4. Governmental, Civic, or Private Group

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
Presentation	AACOG New Hire	Amber Mayne, AACOG Cindy Krueger, AACOG	7/18/2007	AACOG Staff
Workshop	Advancing the Choice	Andrew Hudgins, AACOG	7/26/2007	Industry/Government Fleet Owners
Presentation	SAWS Brown Bag	Amber Mayne, AACOG	7/31/2007	SAWS Employees
Presentation	SAWS Brown Bag School Pool	Amber Mayne, AACOG Heather Wildden, AACOG	8/8/2007	SAWS Employees
Presentation	Commute Solutions Programs	Amber Mayne, AACOG Cindy Krueger, AACOG	8/16/2007	AACOG New Hire Staff
Presentation	River Cities Rideshare	Amber Mayne, AACOG	9/5/2007	HR dept. Citigroup
Presentation	Commute Solutions Programs	Amber Mayne, AACOG	10/8/2007	Staff Aids for City Council
Presentation	Commute Solutions Programs	Amber Mayne, AACOG Cindy Krueger, AACOG	10/18/2007	AACOG New Hire Staff
Presentation	Commute Solutions Programs	Amber Mayne, AACOG Cindy Krueger, AACOG	11/28/2007	AACOG New Hire Staff

**5. School - Related Education**

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
Event	Homeschool Round Up	Heather Willden, AACOG Brenda Williams, AACOG Amber Mayne, AACOG	7/28/2007	Educators
Event	Seguin Stuff the Bus	Brenda Williams, AACOG Isabel Gonzales, AACOG	8/8/2007	Parents and Students
Event	District 4 Health Fair	Heather Willden, AACOG Amber Mayne, AACOG	8/18/2007	Parents and Students
Event	Science Fair	Brenda Williams, AACOG	9/29/2007	Parents and Students
Presentation	AQ Education	Amber Mayne, AACOG Brenda Williams, AACOG Isabel Gonzales, AACOG	10/9 - 10/10/2007	Gallardo Elementary School Students, K - 5th Grades
Presentation	AQHA Banner Program	Brenda Williams, AACOG	10/10/2007	Camelot Elementary School Teachers
Presentation	East Hills Elementary School Health Fair	Brenda Williams, AACOG	10/26/2007	Parents
Event	Green Patrol Kick-off @ Camelot Elementary	Brenda Williams, AACOG	10/29/2007	Teachers, Students, and Parents
Presentation	Green Patrol	Amber Mayne, AACOG	11/29/2007	NE ISD Health Administrators

**6. Events & Public Meetings**

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
Event	Fresh Air Friday	All Outreach Staff	7/13/2007	Downtown workforce
Drop-off	Fans at Blue Star	Amber Mayne, AACOG	7/20/2007	General Public
Event	National Night Out	Heather Willden, AACOG	8/7/2007	General Public
Event	NW Vista College Health Fair	Amber Mayne, AACOG	8/17/2007	Elderly Community
Event	Hands on Trash	Brenda Williams, AACOG	8/19/2007	General Public
Event	Movies in the Park (Wizard of Oz)	Brenda Williams, AACOG Andrew Hudgins, AACOG Isabel Gonzales, AACOG	9/8/2007	General Public
Event	Hispanic Health Fair	Brenda Williams, AACOG	9/15/2007	Families
Event	District 6 Go Green Summer Fling	Andrew Hudgins, AACOG	9/15/2007	General Public
Event	District 7 Health Fair	Heather Willden, AACOG	9/15/2007	General Public
Workshop	Metropolitan Transportation Planning Workshop	Heather Willden, AACOG	9/18/2007	General Public
Event	Renewable Energy Workshop	Amber Mayne, AACOG	9/28 - 9/30/2007	General Public
Event	National Public Lands Day / Graffiti Wipeout	Heather Willden, AACOG	9/29/2007	General Public
Event	Jewish Community Center	Andrew Hudgins, AACOG	9/30/2007	Jewish Community and General Public
Event	Comal County Health Fair	Brenda Williams, AACOG	10/6/2007	General Public
Event	District 3 Fall Fair	Amber Mayne, AACOG	10/6/2007	General Public
Event	Mitchell Lake Wildlife Festival	Donna Hessong, AACOG Andrew Hudgins, AACOG Peter Bella, AACOG	10/13/2007	General Public
Event	Babies R Us Health Fair	Steven Smeltzer, AACOG	10/13/2007	Families
Event	Hike Bike Campout @ Calveras Lake	Brenda Williams, AACOG Isabel Gonzales, AACOG	10/20/2007	General Public
Event	Make a Splash Home School Water Festival	Amber Mayne, AACOG	10/24/2007	Families
Event	District 10 Services Expo @ NE ServicesCenter	Peter Bella, AACOG	11/3/2007	General Public
Event	Christmas Along the Corridor	Amber Mayne, AACOG Brenda Williams, AACOG	12/1/2007	General Public
Seminar	Clean Air through Energy Efficiency	Andrew Hudgins, AACOG	12/17/07 - 12/18/07	General Public

**7. Press Items and Proclamations**

Type of Outreach	Subject	Contact Persons w/Organizations	Date	Target Audience
Newsletter	Fresh Air Friday	Brenda Williams, AACOG Amber Mayne, AACOG Heather, Willden AACOG Tiffany Pickens, AACOG	7/1/2007	AACOG Region
Media Advisory	WHO'S THE WINNER? Event to Announce Corporate Challenge Winner	Brenda Williams, AACOG Heather, Willden AACOG Tiffany Pickens, AACOG	7/12/2007	AACOG Region
News Release	Fresh Air Friday Rescheduled-First of its kind!	Brenda Williams, AACOG Amber Mayne, AACOG Tiffany Pickens, AACOG	7/12/2007	AACOG Region
News Release	OZONE SEASON 2007: STAY OUT OF THE RED ZONE Local agency works to keep air clean and out of violation	Brenda Williams, AACOG Heather, Willden AACOG Tiffany Pickens, AACOG	7/12/2007	AACOG Region
PSA	OZONE SEASON 2007: Help Keep Us Out of the RED ZONE!	Brenda Williams, AACOG Heather, Willden AACOG Tiffany Pickens, AACOG	7/12/2007	AACOG Region

News Release	POLLUTION REDUCTION: SAN ANTONIO LOSES ONE TON: Walk & Roll Challenge	Brenda Williams, AACOG Heather Willden, AACOG Tiffany Pickens, AACOG	7/12/2007	AACOG Region
<b>7. (Cont.)</b>				
<b>Type of Outreach</b>	<b>Subject</b>	<b>Contact Persons w/Organizations</b>	<b>Date</b>	<b>Target Audience</b>
News Release	ADVANCING THE CHOICE: FUELING THE FUTURE CNG Fleet & Infrastructure Expnads	Brenda Williams, AACOG Andrew Hudgins, AACOG Tiffany Pickens, AACOG	7/16/2007	AACOG Region
Newsletter	Pollution Reduction: Alamo Area Sheds One Ton	Brenda Williams, AACOG Heather Willden, AACOG Tiffany Pickens, AACOG	8/1/2007	AACOG Region
PSA	SCHOOL'S BACK IN SESSION AND SO IS AIR POLLUTION—HELP KEEP US OUT OF THE RED ZONE!	Brenda Williams, AACOG Heather Willden, AACOG Tiffany Pickens, AACOG	8/27/2007	AACOG Region
Newsletter	Ozone Season and Walk & Roll Challenge Update	Brenda Williams, AACOG Amber Mayne, AACOG Tiffany Pickens, AACOG	9/1/2007	AACOG Region
Newsletter	Ozone Season closing announcement and Walk and Roll Challenge participation thanks	Brenda Williams, AACOG Amber Mayne, AACOG Tiffany Pickens, AACOG	10/31/2007	AACOG Region
Newsletter	2007 Ozone Season Conclusion	Brenda Williams, AACOG Amber Mayne, AACOG Tiffany Pickens, AACOG	11/1/2007	AACOG Region

**8. Website for Public Viewing**

Agency/Company	Site Name	How It Relates	URL
AACOG	CleanAirDrive.com	Natural Resources Programs	<a href="http://www.cleanairdrive.com">http://www.cleanairdrive.com</a>
AACOG	Air Quality	AQ Info (AQ Fact Sheet. Pdf) [TRANSPORT]	<a href="http://www.aacog.com/air/">http://www.aacog.com/air/</a>
AACOG	Commute Solutions	Reducing SOVs	<a href="http://www.aacog.com/commutesolutions/">http://www.aacog.com/commutesolutions/</a>
AACOG	Adopt-a-School Bus	Reduce pollution from school buses	<a href="http://www.aacog.com/schoolbus/">http://www.aacog.com/schoolbus/</a>
AACOG	TERP	Grants for use of pollution reduction technologies	<a href="http://www.aacog.com/terp/">http://www.aacog.com/terp/</a>
AACOG	ACAP	Business community commitment to AQ	<a href="http://www.aacog.com/acap/">http://www.aacog.com/acap/</a>
AACOG	Walk & Roll Challenge	Month-long challenge promoting walking, biking, carpooling/vanpooling, and busing [TRANSPORT]	<a href="http://www.walkandrollchallenge.com/">http://www.walkandrollchallenge.com/</a>
AACOG	Clean Cities	Promotes alternative fuels	<a href="http://www.aacog.com/cleancities">http://www.aacog.com/cleancities</a>
AACOG	Kids Zone	Links and fun activities about AQ for kids	<a href="http://www.aacog.com/aboutaacog/kidszone/">http://www.aacog.com/aboutaacog/kidszone/</a>
AACOG	Clean Air Plan	Posting of the Clean Air Plan for SA region	<a href="http://www.aacog.com/cap/">http://www.aacog.com/cap/</a>
AACOG	Cleaner Texas Cleaner World		<a href="http://www.aacog.com/air/cleantexas/cleantexas.asp">http://www.aacog.com/air/cleantexas/cleantexas.asp</a>
AACOG	Conceptual Model	Posting of report	<a href="http://www.aacog.com/naturalresources/cm/042705_ConcModel2004.pdf">http://www.aacog.com/naturalresources/cm/042705_ConcMModel2004.pdf</a>
AACOG	Emission Inventories	Posting of San Antonio region air EI for 1996	<a href="http://www.aacog.com/naturalresources/1996%20Emissions%20Inventory/1996EI_TOC.html">http://www.aacog.com/naturalresources/1996%20Emissions%20Inventory/1996EI_TOC.html</a>
AACOG	Emission Inventories	Posting of San Antonio region air EI for 1999	<a href="http://www.aacog.com/naturalresources/1999%20Emissions%20Inventory/AACOG1999EI_OnlineIndex.html">http://www.aacog.com/naturalresources/1999%20Emissions%20Inventory/AACOG1999EI_OnlineIndex.html</a>
AACOG	Emission Inventories	Posting of San Antonio region air EI for 2002	<a href="http://www.aacog.com/naturalresources/2002_NET_EI/">http://www.aacog.com/naturalresources/2002_NET_EI/</a>
AACOG	Emissions Trend Analysis 2005	Posting of report	<a href="http://www.aacog.com/naturalresources/pdf/082405_TrendAnalysis_Sept05.pdf">http://www.aacog.com/naturalresources/pdf/082405_TrendAnalysis_Sept05.pdf</a>
AACOG	Clean Air Plan	Posting of plan for San Antonio Region	<a href="http://www.aacog.com/cap/">http://www.aacog.com/cap/</a>
AACOG	AACOG regional newsletter	Newsletter informing the region of events, happenings, etc.	<a href="http://www.aacog.com/newsletter/">http://www.aacog.com/newsletter/</a>
AFP	AQ & Trees	Information on trees in regards to AQ	<a href="http://www.alamoforestpartnership.org/">http://www.alamoforestpartnership.org/</a>
MPO	Ozone/AQ	General information on ozone and AQ	<a href="http://www.sametroplan.org/pages/Air_Quality/MPOOzone.html">http://www.sametroplan.org/pages/Air_Quality/MPOOzone.html</a>
MPE	Homepage	Energy Efficiency	<a href="http://www.mp4e.info/">http://www.mp4e.info/</a>
Build SA Green	Homepage	Building energy efficient homes in San Antonio	<a href="http://www.buildsagreen.org/">http://www.buildsagreen.org/</a>
Solar San Antonio	Homepage	Solar Energy	<a href="http://www.solarsanantonio.org/">http://www.solarsanantonio.org/</a>
COSA	Environmental Services		<a href="http://www.sanantonio.gov/enviro/">http://www.sanantonio.gov/enviro/</a>
CPS	Rebates and Programs	Programs to conserve energy, preserve the environment and save money on utility bills	<a href="http://www.citypublicservice.com/content_listInternet.asp?content_id=13">http://www.citypublicservice.com/content_listInternet.asp?content_id=13</a>
WOAI	Air Quality	General information on AQ, ozone, & AQHA days	<a href="http://www.woai.com/weather/story.aspx?content_id=B9E06E29-059F-4DAD-ACFA-9DF72655970F">http://www.woai.com/weather/story.aspx?content_id=B9E06E29-059F-4DAD-ACFA-9DF72655970F</a>

**9. Informational Materials and Distributions for All Outreach Efforts through AACOG**

Type of Outreach	Subject / Title	Description	Quantity	Target Audience
Promotional Item	10 things you can do...	bookmark to promote clean air practices	65	General Public - Adult
Children's Item	10 things you can do...	bookmark to promote clean air practices	3	General Public - Children
Informational Item	ACAP Take Out Air Pollution	promotes good AQ practices	53	General Public
Promotional Item	Adopt-a-School Bus Bookmark	Encourage cleaner school buses	269	Elementary-age children
Promotional Item	Air Action Backpack	Backpack	26	Teachers
Poster	Air Pollution Gremlins	TCEQ poster - 6 Gremlin characters with the six primary air pollutants (e.g. Odorous Ozone), English & Spanish	53	Teachers, Elementary-age to Middle School age children
School Item	Air Quality & Transportation Curriculum	Compilation of lessons/activities adapted for region. [TRANSPORT]	20	Teachers/School Admin./Parents
Promotional Item	Anti-Idling Mist fan	Incentive/reward/promote no-idle parents	23	Parents
Flyer	AQHA Instructions	Instructions to join notification program	232	Adult 18+

Flyer	AQI	Informational handout (Eng/Span) on Air Quality Index	547	General Public
Informational Item	AQ Spinner	AQ Info	4	Elem. School Parents
<b>9. Informational Materials and Distributions for All Outreach Efforts through AACOG</b>				
Type of Outreach	Subject / Title	Description	Quantity	Target Audience
Promotional Item	Backpack	Backpack	35	School Parents/Nurses
Promotional Item	Bike Buddies Bottles	Promote Bike Buddies program/Incentive	47	General Public
Promotional Item	Bike Maps	Displays safety of routes for bicyclists	15	General Public
Card	Business Cards	Point-of-Contact material	133	General Public
Informational Item	Car Care 101	Encourages drives to maintain their vehicle	1	General Driving-age public
Brochures/Form	CARE	Promote and recruit CARE program participants	50	Carpoolers (those who have matched in program)
Promotional Item	Clean Air Drive Bags	Promote Clean Air	588	General Public
Promotional Item	Clean Air Drive Fans	Promote Clean Air	710	General Public
Promotional Item	Clean Air Drive Pens	Pen with 6 pollution reduction tips	324	General Public
Promotional Item	Clean Air Drive Pens	File Folder w/web address for CAD	28	General Public
Promotional Item	Clean Cities Static Sticker - Reuse	sticker promoting recycled/reuse/reduce	50	General Public
Promotional Item	Clean Cities Bags	Plastic Bags	1	General Public - Walk-ins
Promotional Item	Commute Solutions Blinking Light	Incentive item to encourage program participation (e.g. reward for walkers)	15	General Public
Promotional Item	Commute Solutions Lanyards	Incentive item to encourage program participation (e.g. reward for carpoolers)	585	Driving-age general public
Promotional Item	Commute Solutions Lunch Sacks	Incentive item to encourage program participation (e.g. reward for carpoolers)	1	Driving-age general public
Promotional Item	Commute Solutions Squeeze Car	Incentive item to encourage program participation (e.g. reward for carpoolers)	148	Driving-age general public
Promotional Item	Commute Solutions Travel Mug	Incentive item to encourage program participation (e.g. reward for carpoolers)	2	Driving-age general public
Promotional Item	DCAT Air Care Kit	promotional item, reward for participating in program	54	Driving-age public
Brochure	DCAT Asthma/Health	Information highlighting connection between asthma and air quality	272	School Parents/Nurses
Poster	DCAT Asthma/Health	Information highlighting connection between asthma and air quality	91	School Parents/Nurses
Video	DCAT Clean Air Crew	DCAT cartoon, 6 minute video featuring Tex & Dot & the Clean Air Crew	11	Elementary-age Children & Teachers
Childrens Item	DCAT Coloring Book	DCAT coloring book - promoting air quality to students, English	1040	Teachers, Elementary-age children
Promotional Item	DCAT Notepads	Provides quick tips to improve air quality	47	General Public
Childrens Item	DCAT Stickers	Encourages RideSharing	197	Children, families, teachers, parents, grandparents
Childrens Item	DCAT Stickers	Encourages the maintenance of vehicles and protecting one's own health	41	Children, families, teachers, parents, grandparents
Childrens Item	DLAT Tattoos	Temporary tatoos with "Drive Clean Across Texas" on them	304	Children
Folder	Education/Curriculum Mini Folder	Folder	56	Teachers
Flyer/Poster	Effects of Common Air Pollutants	Flyer version of poster detailing effects of air pollution	82	General Public
Promotional Item	Key Ring: Tire Pressure Gauge	Reminds public to maintain proper tire pressure	630	General Driving Age Public
Brochure	La manera en que manejas	AQ Spanish material	43	Spanish Speaking Public
Promotional Item	No Idle Pledge Pens	Reminds public to avoid idling	235	General Public
Form	No Idle Pledges - Parent	Pledges not to idling vehicles	820	parents
Promotional Item	Recycle Wrist Bands	promoting recycling	85	General Public
Brochure	River City Rideshare	carpooling info	690	General Driving-age Public
Flyer/Form	School Commute Solutions	Participation form to join program	205	K-12 parents/Teachers/Principals
School Item	School Toolkit: Ozone 101	Toolkit to describe ozone pollution and AACOG services/programs	23	Teachers/School Admin./Students/Parents
Promotional Item	Spray Bottles	spray bottles providng organic plant recipes	72	General Public
Children's Item	Stickers - Strip of 5	Stickers promoting AQ good practices	257	General Public - Children
Informational Item	Teacher Packet	AQ information	50	Educators
Gift Bag	Texas Bags	Prepared items in bag	43	General Public
Brochure	Walk & Roll	Promoted Events	423	General Public
Flyer	We'd Love To Visit...	Promotes AACOG program presentations	244	General Public, organization members
Brochure	When you care for your car...	care care as relates to AQ	19	General Public
Promotional Item	Wind Energy	wind energy info	58	Educators



**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Sidewalk	Acme Road	Old Highway 90		2001	0.069	0.058
Sidewalk	Gevers St	IH 10	Southcross	2001	0.242	0.204
Sidewalk	Henderson Pass	Thousand Oaks	Gold Canyon	2001	0.202	0.170
Sidewalk	IH 410	Bertetti	Marbach	2000	0.050	0.042
Bike/Ped	Mission Trails (Phase 3)	E. Southcross	Mitchell St.	2001	0.712	0.600
Bike/Ped	Mitchell St.	Probandt to	Roosevelt	2003	0.104	0.088
Bike/Ped	Nogalitos (LP 353)	Zarzamora / New Laredo Hwy	Surrey	2003	0.235	0.198
Bike/Ped	Probandt St.	US 90	Mitchell	2003	0.014	0.012
Bike/Ped	Prue Rd	Laureate	Fredericksburg	2002	0.065	0.054
Bike/Ped	Rittiman	Austin Hwy (LP 368)	Harry Wurzbach	2002	0.124	0.105
Bike/Ped	Timber Path Bikeway	Les Harrison	Grissom Rd.	2001	0.166	0.140
Bike/Ped	Bitters Rd	Broadway	Nacogdoches Rd.	2003	0.282	0.237
Bike/Ped	Callaghan	Hemphill	Culebra	2003	0.266	0.225
Bike/Ped	Coliseum Rd.	East Houston St.	Gembler Rd.	2004	0.123	0.104
Bike/Ped	East Houston St.	Walters	Onslow	2003	0.054	0.045
Bike/Ped	East Houston St.	Onslow St.	Salado Creek	2002	0.084	0.071
Bike/Ped	Pearsall Rd (FM 2536)	Loop 13 (Military Drive)	IH 410	2003	2.630	2.216
Bike/Ped	Pecan Valley Dr	J St. to	IH 10	2003	0.049	0.041
Bike/Ped	Pleasanton	Moursund	Gillette	2003	0.027	0.023
Bike/Ped	Southcross	WW White (LP 13)	Loop 410	2003	0.209	0.176
Bike/Ped	Uhr Lane	Higgins	Thousand Oaks	2004	0.210	0.177
Bike/Ped	New World	Crestway	Montgomery	2004	0.050	0.042
Sidewalk	New World	Hwy 90	Walzem Rd ( FM 1976)	2004	0.050	0.042
Sidewalk	Alamo	Cedar	San Antonio River	2003	0.031	0.026
Sidewalk	W.W. White Rd. (Loop 13)	Seale Road	IH-10	2005	0.336	0.283
Sidewalk	Grissom/Culebra (FM 471)	SH 16	Loop 1604	2004	2.040	1.719
Sidewalk	Southcross Blvd.	S. New Braunfels to S. Presa St.	S. Presa St.	2004	0.107	0.090
Sidewalk	Hunt Lane	Marbach to US 90	US 90	2004	0.273	0.230
Sidewalk	Isom	Ramsey	US 281	2004	0.084	0.071
Sidewalk	Roland (US 87)	IH 10	Rigsby Avenue	2005	0.100	0.084
Sidewalk	SH 218 (Pat Booker Road)	Loop 1604	FM 78	2005	0.998	0.841
Sidewalk	Sunset	Jones Maltsberger	Teak	2005	0.135	0.114
Sidewalk	Kitty Hawk Rd	Miller Rd.	Converse City Limits	2005	0.070	0.059
Bikeway	UTSA to OLLU Corridor	Houston St.	24th St.	2005	0.507	0.427
Bikeway	Crestway	Miller Road	New World	2005	0.070	0.059
Sidewalk	New World	Crestway	Miller Road	2005	0.026	0.022
Bike racks		Various Locations		2005	0.000	0.000
Sidewalk	Crestway Drive	New World	Windcrest City Limits	2005	0.060	0.051
Sidewalk	E. Houston	Pine	Walters	2006	0.060	0.050
Bike Lane	Ingram	Callaghan	Benrus	2007	0.215	0.181
Bike Lane	SH 218	Loop 1604	FM 78	2004	0.928	0.782
Sidewalk	Flores, S	0.6 Mi N of Malone	Octavia	2006	0.191	0.161
Sidewalk	Mayfield	Commercial	Zarzamora	2007	0.024	0.020
Sidewalk	McCullough	Basse	RR Tracks	2007	0.087	0.073
Bike Lane	SAC to CBD	Howard	4th	2001	0.082	0.069
Bike Lane	Montana/Nevada	Cherry	Meerscheidt	2001	0.040	0.034
Bike Lane	N.Zarzamora	Nogalitos	Theo	2001	0.158	0.133
Bike Lane	N. St. Mary's	Lexinton	Huisache	2001	0.199	0.168
Bike Lane	Callaghan	Old Highway 90	New HWY 90	2001	0.128	0.108
Bike Lane	S. Zarzamora	SW Loop 410	IH 35	2001	0.338	0.285
Bike Lane	Caliza	Encino Rio	Evans Rd.	2001	0.061	0.052
Bike Lane	UTSA to SAC	Buena Vista	San Pedro	1999	0.299	0.252
Bike Lane	Les Harrison	Culebra	Dover Ridge	2000	0.313	0.264
Bike Lane	Josephine Grayson	Broadway	New Braunfels	2000	0.085	0.072

**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Bike Lane	Walters	Fair Ave.	Rigsby Avenue	2000	0.235	0.198
Bike Lane	Villaret	Zarzamora	Hwy 16	2000	0.074	0.062
Sidewalk	Rice Reconstruction	W. W. White	Semlinger	2005	0.033	0.028
Sidewalk	New Braunfels	LP 337	0.8 KM N of Walnut Ave.	2005	0.197	0.166
Side walk	Gen McMullen	Roselawn	Commerce	1999	0.664	0.560
Bike Path	Avenue B (Bicycle Lanes)	Mulberry	Brackenridge	2000	0.095	0.080
Bike Path	Montana Street Bike Lane	Alamodome	Walters	2001	0.018	0.016
Bike Path	Villaret Bicycle Transportation	W. Villaret	E. Villaret	2001	0.107	0.090
Bike Path	Zarzamora Bike Lane	IH 35	Loop 410	2001	0.495	0.417
Sidewalk	Mckay	(400 Block)	(500 Block)	2001	0.008	0.006
Sidewalk	Harvard Terrace	Yale	University	2001	0.001	0.001
Side walk	Dell Place Drainage Project	North Freeman	(dead end)	2001	0.00001	0.00001
Sidewalk	Hardeman St Sidewalks	Mesquite	Hackberry	2001	0.002	0.002
Sidewalk	Gevers-IH 10	Gevers	Southcross	2002	0.131	0.110
Sidewalk	New Braunfels	Rigsby	Southcross/IH 37	2001	0.278	0.234
Sidewalk	Henderson Pass Sidewalks	Thousand Oaks	Gold Canyon.	2001	0.818	0.689
Sidewalk	Danbury Sidewalks:	Nacogdoches	Broadway	2002	0.021	0.018
Sidewalk	Ray Bon Drive Sidewalks	Eisenhauer	Village Haven	2002	0.031	0.026
Sidewalk	New Braunfels	IH 35	Grayson	2002	0.068	0.057
Sidewalk	Pedestrian Bridge	War Horse	Trading Post	2002	0.001	0.000
Sidewalk	Hoover Street	Nogalitos	Charlotte	2003	0.003	0.002
Sidewalk	2003 NAMP Sidewalk	Mccullough	Mulberry	2004	0.595	0.502
Sidewalk	Navajo Area Streets	(Navajo/Hutchins/Barlite)	(Navajo/Hutchins/Barlite)	2004	0.159	0.134
Sidewalk	McCarty Sidewalks & Curbs	Lorene	Blanco	2004	0.031	0.026
Sidewalk	Harris Storm Drainage	Alvarez	(Glass/Cass/Halstead)	2005	0.038	0.032
Sidewalk	Kono	Gembler	Belgium	2006	0.026	0.022
Sidewalk	Octavia	#63 Phase II	Part B	2005	0.103	0.087
Sidewalk	La Manda	West Avenue	Buckeye	2006	0.006	0.005
Sidewalk	Rosabell Street	Culebra	Inez	2006	0.006	0.005
Sidewalk	Cincinnati	Fredericksburg	IH 10	2005	0.019	0.016
Sidewalk	Cornell	Brazos	Colorado	2005	0.009	0.007
Signal	US 281	At Borgfeld, Bulverde, Wilderness Oaks,	and Stone Oak Roads	2004	3.797	2.327
Signal	Foster Road	Candlemeadow	4C	2005	0.253	0.155
Signal	Foster Road	Summer Fest	4C	2005	0.059	0.036
Signal	SH46	HEB driveway		2002	0.052	0.041
Signal	FM 725	County Line Rd		2002	1.003	0.788
Signal	FM 3009	FM 2252 in Garden Ridge		2002	0.575	0.452
Signal		Union	Common	2004	0.075	0.059
Signal	FM 3009	Savana/Verde Dr.		2004	2.097	1.488
Signal	SH46	US 90		2007	1.165	0.827
Signal	SH46	US 90		2006	0.272	0.193
Signal	FM 3009	IH 35E	0.21 Mi SE of IH 35	2004	1.010	0.717
Intersection	Hunt Lane	Marbach	US 90	2004	2.790	1.674
Intersection	Bitters	East of West Ave (W.of US 281)		2005	5.529	3.317
Intersection	Wurzbach	Ironside	IH 10	2006	6.251	3.751
Intersection	IH 10	IH 10 West at Huebner Road		2006	4.664	2.798
Intersection	Loop 1604	SH 16	FM 1937	2006	0.173	0.104
Intersection	Loop 1604	IH 35	SH 16	2006	3.731	2.239
Intersections	James Park Development	Rittiman and Holbrook.		2006	2.292	1.375



**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Intersections	West Ave	Larkspur	Silver Sands, Rhapsody and Nakoma	2000	15.325	9.195
Intersections	Tezel	Tezel	Timber Path	2000	3.168	1.901
Intersections	Broadway	Broadway	Wetmore Rd	2001	2.044	1.227
Intersections	Southwest Craft Cntr	Navaro	Augusta	2004	0.842	0.505
Park & Ride	Crossroads	IH-10W & Loop 410		1988	2.039	1.718
Park & Ride	Ellis Alley	Chestnut & Center Street		1998	2.083	1.755
Park & Ride	University	IH 10 W & Loop 1604		1993	15.150	12.767
Park & Ride	Elmendorf	US 181 S.& Loop 1604		1981	2.573	2.168
Park & Ride	St. Hedwig	FM 1346 & Pittman Rd.		1988	0.529	0.446
Park & Ride	Randolph Blvd	IH 35 N & Crestway		1980	3.038	2.560
Transit CT.	Ingram	Ingram Road & Northwestern		1988	0.547	0.461
Transit CT.	Kel-Lac	US 90 W. & Military Dr.		2004	1.558	1.313
Grade Sep	Loop 1604	0.52 KM N of FM 471 (Culebra Rd.)	0.98 KM S of FM 471 (Culebra Rd.)	2003	17.896	10.738
Grade Sep	IH 410	SH 16	UPRR	2006	3.722	2.233
Traffic Flow	Acme Road	Old Highway 90		2001	0.622	0.207
Traffic Flow	Evers Rd.	N. of Glen Ridge	Daughtry Dr.	2000	1.335	0.445
Traffic Flow	FM 2522 (Perrin Beitel)	IH 410		2000	0.526	0.175
Traffic Flow	FM 78	Bexar Co. Ln.	FM 3009	2002	2.653	0.884
Traffic Flow	Houston (FM 1346)	Pop Gunn		2000	2.002	0.667
Traffic Flow	IH 10	0.2 mile South of Callaghan Road	0.2 mile South of N. Crossroads Blvd.	2005	27.854	9.285
Traffic Flow	IH 410	Interchange at US 281 Fr: US 281	Nacogdoches	2003	6.472	2.157
Traffic Flow	SH 151	Callaghan Rd		2004	0.335	0.112
Traffic Flow	Tezel	Timber Path		2000	0.609	0.203
Traffic Flow	US 281	0.590 KM N of LP 1604	0.746 KM N of LP 1604	2000	6.398	2.133
Traffic Flow	West Avenue	FM 1535 (NW Military Hwy)	IH 410	2002	2.646	0.882
Traffic Flow	Wurzbach Parkway	Lockhill-Selma	FM 1535 (NW Military Hwy)	2002	0.460	0.153
Traffic Flow	24th	Commerce	Culebra	2001	2.353	0.784
Traffic Flow	Ackerman Rd.	IH 10	Dietrich	2002	0.190	0.063
Traffic Flow	Hildebrand	IH-10	Breeden	2003	2.767	0.922
Traffic Flow	Hildebrand	Hwy. 281		2001	0.454	0.151
Traffic Flow	Huebner Road	Evers Road	Redbird Lane (E of city limit)	2001	1.288	0.429
Traffic Flow	Lockhill Selma	George Road	Whisper Path	2003	0.846	0.282
Traffic Flow	O'Connor Rd	Crosswinds	IH 35	2003	3.418	1.139
Traffic Flow	Wetmore	At Broadway		2001	0.203	0.068
Traffic Flow	Wurzbach Rd	0.6 Mi East of Ingram Rd	Leon Valley WCL	2001	1.945	0.648
Traffic Flow	Coliseum Rd.	Belgium Rd.	IH 35	2002	0.712	0.237
Traffic Flow	Culebra Rd (FM 471)	Loop 1604		2007	4.097	1.366
Traffic Flow	IH 410	Jackson-Keller Road	Honeysuckle Lane	2005	42.811	14.270
Traffic Flow	IH 410	Honeysuckle Lane	Blanco Rd	2005	25.183	8.394
Traffic Flow	Loop 1604	0.6 KM N of Military Dr	US 90	2007	10.960	3.653
Traffic Flow	Loop 1604	1.6 KM N. of FM 471 (Culebra Rd)	0.6 KM N of Military Dr.	2007	10.818	3.606
Traffic Flow	Loop 345	Cinnamon Creek	USAA Blvd	2002	0.136	0.045
Traffic Flow	Wurzbach Road	Crystall Hill	Crystall Hill	2003	1.361	0.454
Traffic Flow	IH 35	Coliseum & Walters		2004	0.053	0.018
Traffic Flow	IH 410	SH 151		2006	0.009	0.003

**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow	Pleasanton	Southcross	Mayfield	2004	0.981	0.327
Traffic Flow	Ralph Fair Rd. (FM 3351)	Fawn Mountain, Pimlico, Dietz-Elkhorn	Fair Oaks Parkway	2003	4.243	1.414
Traffic Flow	SH 151	0.22 Mi W of Callaghan Rd.	0.3 Mi E of IH 410	2005	17.904	5.968
Traffic Flow	SH 151	0.3 Mi E of IH 410	1.0 Mi E of Loop 1604	2004	19.142	6.381
Traffic Flow	Ironside	Wurzbach		2005	0.326	0.109
Traffic Flow	Mission Rd.	N. of SA River Mission Pkwy		2007	0.070	0.023
Traffic Flow	Thousand Oaks	Broken Oak, Ledge View, Turkey Point,	Pebble Forest & Oak View	2007	2.118	0.706
Traffic Flow	Zarzamora	IH 410	Applewhite Road	2005	1.999	0.666
Traffic Flow	Applewhite Road	Zarzamora	Watson Road	2005	1.999	0.666
Traffic Flow	Loop 1605	FM 1937	IH 37	2005	1.243	0.414
Traffic Flow	Military Dr., S.E. (LP 13)	Padre	Mission Rd 4C	2006	0.486	0.162
Traffic Flow	LP 337	0.16 KM N of BI 35-H	0.48 KM N of UPRR	2002	3.446	1.378
Traffic Flow	SH 46	2.2 Mi S of FM 758 New Braunfels	Camp Willow Rd. (0.2 Mi S of FM 758)	2002	5.878	2.177
Traffic Flow	FM 78	Bexar Co. Ln.	FM 3009	2002	4.299	1.592
Traffic Flow	FM 1346	US 87 W of Lavernia	FM 775	2002	1.400	0.560
Traffic Flow	SH 46	0.2 Mi S of FM 758	Comal Co line	2004	4.219	1.562
Traffic Flow	SH 123	Fr US 90 Kingsbury St	IH 10	2007	1.193	0.442
Traffic Flow	Wurzbach Parkway Phase IV	Military Highway	Blanco Road	2002	17.353	5.784
Traffic Flow	Wurzbach Rd:	Ingram Rd	Leon Valley	2002	4.649	1.550
Traffic Flow	Hamilton	Guadalupe	Laredo	1999	0.582	0.194
Traffic Flow	Wurzbach Rd @ Vance Jackson			1999	2.227	0.742
Traffic Flow	Mitchell Street	Probandt	Presa	1999	0.336	0.112
Traffic Flow	Valley Hi Drive	IH 410	Ray Ellison	1999	0.412	0.137
Traffic Flow	Chipinque Drainage	General McMullen	Escuela	1999	1.297	0.432
Traffic Flow	Zarzamora	Culebra	Commerce	1999	2.705	0.902
Traffic Flow	Calaveras	Saunders	Guadalupe	1999	0.568	0.189
Traffic Flow	Courtland Street	Mccullough	St. Mary's	1999	0.424	0.141
Traffic Flow	Guadalupe Gardens Phase II			1999	1.241	0.414
Traffic Flow	Chico/Knox/Margil			1999	0.024	0.008
Traffic Flow	Folyn/Jersey/Custer/Orange			1999	0.280	0.093
Traffic Flow	Travis	Zarzamora	Hamilton	1999	0.566	0.189
Traffic Flow	Villa Coronado Streets, Phase III A			1999	0.097	0.032
Traffic Flow	Mayfield	Somerset	Laredo Hwy	1999	0.122	0.041
Traffic Flow	Hazel Drainage	Zarzamora	Brazos	1999	0.751	0.250
Traffic Flow	Lillita	Gen. McMullen	Las Palmas	1999	0.108	0.036
Traffic Flow	Advance & Brice			1999	0.045	0.015
Traffic Flow	calle morelia drainage			1999	0.095	0.032
Traffic Flow	Emory / Kentucky			1999	0.120	0.040
Traffic Flow	26th Street	Travis	Culebra	1999	0.147	0.049
Traffic Flow	Wurzbach Parkway Phase II			1999	11.623	3.874
Traffic Flow	Keitha Area Streets Phase II			1999	0.645	0.215
Traffic Flow	Muskogee	Acme	40th	1999	0.080	0.027
Traffic Flow	Boehmer	Burbank Loop	S. Flores	1999	0.014	0.005
Traffic Flow	Dewitt	IH 10	Fairmont	1999	0.028	0.009
Traffic Flow	Claremont/Eleanor/Natalen, Ph I & Mahncke Ph IV			1999	0.234	0.078
Traffic Flow	Lake Blvd/Woodlawn/Streets	Around Woodlawn Lake		1999	2.077	0.692

**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow	S. Flores Drn #70-70a, Ph. II--Part 2			2000	1.057	0.352
Traffic Flow	34th Street	Hwy 90	Castroville	2000	0.064	0.021
Traffic Flow	27th	Culebra	Rivas	2000	0.052	0.017
Traffic Flow	21st Street	Salinas	Poplar	2000	0.268	0.089
Traffic Flow	Eastlawn Neighborhood Streets Phase II			2000	0.435	0.145
Traffic Flow	Southlawn	Merida	Castroville	2000	0.089	0.030
Traffic Flow	Madrid	Merida	Castroville Rd	2000	0.025	0.008
Traffic Flow	Grandview Neighborhood Streets Ph. IIIA		(K Street)	2000	0.047	0.016
Traffic Flow	Wurzbach Parkway Phase III			2000	0.391	0.130
Traffic Flow	Glenmore		Kentucky	2000	0.047	0.016
Traffic Flow	Villa Coronado Streets Phase IIIB			2000	0.043	0.014
Traffic Flow	Arbor	Trinity	San Marcos	2000	0.083	0.028
Traffic Flow	Fairdale	Rittiman	Bloomdale	2000	0.323	0.108
Traffic Flow	Stahl Rd. #1038 Phase I	Fairway Oaks	Bulverde	2000	0.273	0.091
Traffic Flow	Babcock & Hillcrest Intersection			2000	1.364	0.455
Traffic Flow	Apple Valley	Haven Valley	Ray Ellison	2000	0.141	0.047
Traffic Flow	Las Palmas	Charben	26th	2000	0.129	0.043
Traffic Flow	Contour Dr / El Monte St			2000	1.697	0.566
Traffic Flow	Evers Rd	Glenridge	Daughtry	2000	1.424	0.475
Traffic Flow	Baylor St	San Pedro Ck.	Flores St.	2000	0.010	0.003
Traffic Flow	Culebra Area Streets Phase II			2000	0.901	0.300
Traffic Flow	Hildebrand @ 281			2000	1.040	0.347
Traffic Flow	Lone Oak/Latimer:	F St	Brice	2001	0.020	0.007
Traffic Flow	Rip Rap 69-Phic Part 3			2001	0.105	0.035
Traffic Flow	Ackerman	IH 10	Dietrich	2001	0.216	0.072
Traffic Flow	Carson Street	Walters	Frank	2001	0.077	0.026
Traffic Flow	Starcrest	Stuntman	Jones Maltsberger	2001	0.081	0.027
Traffic Flow	Bobolink 96A	Storeywood	Deneice	2001	1.828	0.609
Traffic Flow	Mahncke Area Streets, Phase II			2001	0.752	0.251
Traffic Flow	Creswell	Houston	Deadend	2001	0.024	0.008
Traffic Flow	Thorain	Buckeye	S.P. Railroad	2001	0.039	0.013
Traffic Flow	Fred. Rd	Sandoval	Woodlawn	2001	1.472	0.491
Traffic Flow	Hobart Street	Acme Rd	40th St	2001	0.023	0.008
Traffic Flow	Lawton / Sw 41st Street			2001	0.019	0.006
Traffic Flow	Orr	Suzette	Winkle	2001	0.019	0.006
Traffic Flow	Fleming	Mayfield	Peabody	2001	0.016	0.005
Traffic Flow	Evers Rd @ Wurzbach Rd Intersection			2001	0.102	0.034
Traffic Flow	Capitol	Basse	San Angelo	2001	0.010	0.003
Traffic Flow	Grandview Neighborhood Sts Ph IIIB	Pecan Valley	Amanda	2001	0.020	0.007
Traffic Flow	Pace	Elmendorf	Brazos	2001	0.139	0.046
Traffic Flow	Texas / Waverly Streets			2001	0.527	0.176
Traffic Flow	Basse Road & San Pedro Intersection			2001	1.625	0.542
Traffic Flow	Monterrey	36th	San Joaquin	2001	0.467	0.156
Traffic Flow	Blueridge	Gen McMullen	27th	2001	0.143	0.048
Traffic Flow	Rip Rap 69 - Ph IIC Part 3A			2001	0.166	0.055
Traffic Flow	Callaghan:	Old Hwy 90	Commerce	2001	1.021	0.340
Traffic Flow	Duval/Seguin:	Pierce	Walters	2001	0.223	0.074
Traffic Flow	24th St:	Commerce	Culebra	2001	0.236	0.079
Traffic Flow	Claremont/Eleanor/Natalen, Ph II			2001	0.175	0.058
Traffic Flow	Strech	Chavaneaux	Malley Blvd	2001	0.128	0.043

**Projects Completed On Time**
**Appendix B: TERMS**

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow	Indianola	Garfield	Camargo	2001	0.008	0.003
Traffic Flow	Elsmere	Michigan	Capitol	2002	0.021	0.007
Traffic Flow	Arbor	Trinity	San Marcos Ph II	2002	0.029	0.010
Traffic Flow	Escalon St. #1008			2002	0.051	0.017
Traffic Flow	S. Flores Drn #70-70A, Ph. II--Part 3			2002	11.316	3.772
Traffic Flow	Octavia #63 Phase 1			2002	0.678	0.226
Traffic Flow	Leonhardt Road @ Low Water Crossing			2002	0.299	0.100
Traffic Flow	St. Marys Street -	Pereida	Roosevelt	2002	0.841	0.280
Traffic Flow	Lockhill-Selma:	George	Whisper Path	2003	0.731	0.244
Traffic Flow	39th Street #58m, Phase II A			2003	0.871	0.290
Traffic Flow	Quintana Road Drainage #64 Extension			2003	0.648	0.216
Traffic Flow	S. Flores:	Durango	Franciscan	2003	1.269	0.423
Traffic Flow	Monticello:	S. Gevers	Hillje	2003	0.095	0.032
Traffic Flow	Higgins Road:	Nacogdoches	Stahl	2003	1.551	0.517
Traffic Flow	Hi Lions 80 Mod PIII & V			2004	11.176	3.725
Traffic Flow	Bee Street:	Walters	Frank	2004	0.030	0.010
Traffic Flow	Aransas:	Meerscheidt	Walters	2004	0.077	0.026
Traffic Flow	Flores/Breeden/Beacon, Phase II			2004	0.417	0.139
Traffic Flow	Mockert Street Area	Mockert, Forest,	( W. Lambert, Kline, Cass)	2004	0.435	0.145
Traffic Flow	Pleasanton Road	Gillette	Loop 410	2005	1.076	0.359
Traffic Flow	Northington	S.W. 36th	S.W. 35th	2004	0.075	0.025
Traffic Flow	Fay Street / St Joseph:	Creighton	New Laredo Hwy, Part 1	2005	0.264	0.088
Traffic Flow	Fay Street / St. Joseph:	Creighton	New Laredo Hwy, Part 2	2005	0.256	0.085
Traffic Flow	Belgium:	Picarde	Sbc Parkway	2005	0.137	0.046
Traffic Flow	El Monte	Blanco	San Pedro, Phase II	2005	0.045	0.015
Traffic Flow	Lanark Drainage #92A, Phase 1			2006	0.383	0.128
Traffic Flow	Larkspur	West Ave	Baltic	2006	0.260	0.087
Traffic Flow	Sunset Ph I	Jones Maltsberger	Teak	2006	1.014	0.338
Traffic Flow	Alamo	Durango	Cedar	2006	0.328	0.109
Traffic Flow	Wurzbach Rd @ IH 10 Intersection			2006	2.128	0.709
Traffic Flow	St. Marys Street	Alamo	Pereida	2006	0.202	0.067
Traffic Flow	Ansley Blvd Drainage #1091			2007	0.139	0.046
Traffic Flow	Duke Area Streets, Phase I			2006	0.275	0.092
Traffic Flow	Culebra Area Streets Phase IV			2006	0.288	0.096
Traffic Flow	Howard Drainage	Wildwood	El Monte	2006	0.018	0.006
Traffic Flow	Ave Maria Drainage	Jackson Keller	San Pedro	2007	0.056	0.019
Traffic Flow	Ozark	Erskine	Williamsburg	2006	0.064	0.021
Traffic Flow	Semlinger Road	Lord	Rigsby	2005	0.434	0.145
Traffic Flow	Redland Road Improvements	Redland Woods	Jones Maltsberger	2006	2.516	0.839
Traffic Flow	Lakeview Drive	Woodlake Parkway	Foster Road	2005	0.458	0.153
Traffic Flow	Smith Road	Hwy 16		2007	0.902	0.301
Traffic Flow	Wiseman Road	Loop 1604 west	Talley Road.	2006	5.347	1.782
Traffic Flow	Applewhite Road	Watson Road	Loop 1604.	2005	9.473	3.158
TMS	US 90	0.8 Mi W. of IH 410	Loop 353 Nogalitos	1999	89.898	29.966
TMS	IH-35	FM 1976 (Walzem Road)	New Braunfels Ave.	1999	151.374	50.458
TMS	IH 35	Guadalupe County Line NE	1.77 KM N of FM 1976 (Frat Interchange)	2000	41.339	13.780

# Projects Completed On Time

# Appendix B: TERMS

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
TMS	IH 35	1.77 KM N. of FM 1976 (Fratt int.)	FM 1976 (Walzem)	2000	30.396	10.132
TMS	IH 37	Loop 13	1.3 Mi S of US 181	2000	9.089	3.030
TMS	IH 410	Callaghan Road	Fredericksburg Road	2000	37.141	12.380
TMS	Loop 1604	0.8 KM W of Babcock Road	SH 16(N)	2000	14.741	4.914
ITS	Loop 1604	On N and S frontage roads FM 1535, E	Bitters Rd	2001	6.079	2.026
ITS	Loop 1604	3.21 KM E. of US 281 N.	1.61 KMN of FM 2252	1999	52.434	17.478
ITS	US 281	0.6 Mi N of Loop 1604	2.5 Mi N of Loop 1604	2006	26.445	8.815
ITS	Houston - Walters To Onslow	Onslow	New Braunfels	2003	2.085	0.695
Traffic Flow	Blanco Road	Blanco Road - Hildebrand	Summit Phase 1	2007	3.602	1.201
					946.828	361.737

Note: Totals do not reflect the 758.54 lbs/day VOC and 237.44 lbs/day NOx from the traffic signalization emission reductions. These are completed TERMS projects discussed in detail in Appendix K (Additional evidence) of the SA SIP document.

Completed		946.828	361.737
+ Traffic Signalizations		758.540	237.440
subtotal =		1705.368	599.177
+ Substitutes		133.79	50.13
Total =		1839.160	649.310
SIP credit given for TERMS		1839.160	649.310
- Above total		1839.160	649.310
Grand Total =		0.000	0.000

# Projects Requested for Substitution

## Appendix B: TERMS

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow	US 281	SB US 281	WB IH 410	6/18/2007	23.26	11.92
Traffic Flow	IH 10	WB IH 410	WB IH 10	2005	17.08	5.22
Traffic Flow	IH 10	WB IH 410	EB IH 10	2005	8.08	2.47
Electrification	Comal County	N/A	I-35 N	2006	47.07	N/A*
Electrification	Foster Road	N/A	I-10 E	2004	38.30	30.52

	95.49	19.61
Needed	133.79	50.13
Amount Short	0.00	0.00

\*Only VOC reductions can be claimed for credit, since this is a TERP program and credit for NOx reductions has already been given to the San Antonio region in the SIP document.

Of the 39.23 lbs/day VOC calculated for the truck stop project at Foster Road, credit is only taken for 38.30 lbs/day to meet SIP obligations (leaves surplus of 5.54 lbs/day VOC).

Of the 125.15 lbs/day NOx calculated for the truck stop project at Foster Road, credit is only taken for 30.52 lbs/day to meet SIP obligations (leaves surplus of 96.04 lbs/day NOx).

**Additional Projects** (for substitution should a requested substitution be rejected)

Appendix B: TERMS

Project Type	Project Name	From	To	Completion Date	VOC (lbs/day)	NOx (lbs/day)
Traffic Flow	US 281	SB US 281	WB IH 410	6/18/2007	23.26	11.92
Traffic Flow	IH 10	WB IH 410	WB IH 10	2005	17.08	5.22
Traffic Flow	IH 10	WB IH 410	EB IH 10	2005	8.08	2.47
Traffic Flow	IH 10	EB IH 410	EB IH 10	2005	4.61	1.41
Bike Lane	Zarzamora Bike Lane:	IH 35	Loop 410	6/15/2001	0.495	0.417
Bike path	S. Flores	Kendalia: Harald Ct.	W. Dickson: Harald	2000	1.057	0.352
Bike Path	Pleasanton Road	Gillette	Loop 410	2005	0.057	0.048
Sidewalk	Wurzbach Rd	Ingram Road	Leon Valey	2002	0.476	0.401
Traffic Flow	Fay Street / St. Joseph	Creighton , Part 2	New Laredo HWY	2005	0.256	0.085
Traffic Flow	Kitty Hawk Rd	Miller Rd	Converse city limit	2005	0.747	0.249
Traffic Flow	Crestway	Miller Road	New World	2004	0.723	0.241
Traffic Flow	Crestway Drive	New World	Windcrest City Limits	2004	0.629	0.210
Traffic Flow	Callaghan	Hemphill	Culebra	2001	1.274	0.425
Intersection	Reconfigure intersection	IH 10	1604	2004	3.69	2.21
Intersection	Reconfigure intersection	FM 306	FM3424	2007	0.63	0.38
Traffic Flow	IH 10	WB IH 10	EB IH 410	2007	7.71	2.36
Traffic Flow	IH 10	WB IH 10	WB IH 410	2007	5.99	1.83
Traffic Flow	IH 10/IH 410	Ramp, IH 10	EB IH 410	2002	30.86	9.43
Traffic Flow	IH 10/IH 410	Ramp, IH 10	WB IH 410	2002	16.34	4.99
Traffic Flow	IH 10/IH 410	Ramp, IH 410	WB IH 10	2003	16.80	5.13
Traffic Flow	NAVAJO	Palo Alto to IH 35	Bartlite	2004	1.66	0.55

Emission substituted	142.42	50.33
Emission Needed	133.79	50.13
Deficit/Balance	-8.63	-0.20



## Appendix C – AACOG Outreach Overview, 2003 - 2007

The Clean Air Plan/Early Action Compact Agreement for the San Antonio area, signed by local officials in December 2002, described specific commitments by AACOG and partner organizations regarding air quality outreach and educational activities. Those commitments included the following:

### *AACOG*

- Continue existing Air Quality Health Alert program
- Continue air quality media programs and events
- Provide air quality technical assistance to local industries
- Continue air quality educational program

### *Other Entities*

- Implement Air Quality Health Alert program and employee awareness programs
- Implement quantifiable, voluntary emission reduction programs

### *Air Improvement Resources Committees and AACOG*

- Continue public involvement through public education programs
- Provide opportunities for public involvement in the planning process

Local governments represented by the signatories of the Early Action Compact, the Alamo Area Council of Governments, partner organizations, and private business and industries have implemented the commitments outlined in the Clean Air Plan and proactively adopted additional voluntary measures to improve the region's air quality. The following pages summarize air quality measures and programs adopted and maintained by AACOG, local governments, and other organizations since the Early Action Compact for the San Antonio area was submitted to the State of Texas and the U.S. Environmental Protection Agency in December 2002.



## AACOG Commitments

### Air Quality Health Alert Program

AACOG's Air Quality Health Alert notification system provides alerts to media, local governments, schools, businesses and other organizations regarding ozone forecasts. AACOG receives notification from TCEQ the day before ambient ozone is predicted to reach unhealthy concentrations in the San Antonio area. Once received, AACOG staff broadcasts the alert throughout the region accompanied by information on the predicted severity of the ozone episode, health precautions, and measures the community can take to reduce ozone precursor emissions. As of the end of the 2007 ozone season, the number of recipients – media, governments, schools, and others – participating in the AQHA network totaled more than 1,200.

### Key Accomplishments 2003 - 2007

The AQHA program expanded significantly between 2003 and 2007 with respect to the amount of outreach conducted and number of participants in the notification network. The number of AQHA program participants, for example, more than doubled during the five-year timeframe. In addition to significant expansion of the AQHA network, other key accomplishments between 2003 and 2007 included a very successful AQHA banner campaign and the formation of a partnership between AACOG, the South Texas Asthma Coalition, and school medical personnel that focused on air pollution and health. AACOG's governmental partners were instrumental in the successes of the AQHA program.

#### Expansion of the AQHA Network

The City of San Antonio initiated a program to update and promote the AQHA notification system. In early 2006, the City partnered with SCAN USA and AT&T for emergency broadcasting services to the public. The service was also made available to AACOG for distributing AQHA notifications. The SCAN USA system had several advantages over AACOG's previous distribution method, the most important of which was the greater variety of methods in which participants could receive alerts including email, fax, and text messaging to cell phones.

The City of San Antonio, AACOG, VIA Metropolitan Transit, Bexar County, TxDOT and other partners conducted a press conference in March 2006 to launch the new AQHA broadcast system. VIA displayed AQHA placards inside transit buses (Figure 1), AACOG's outreach staff promoted the program at events and presentations, and the City displayed program posters in city facilities. Although the ScanUSA notification system was discontinued after the 2006 ozone

season, the outreach efforts by the City of San Antonio, VIA and other partners helped raise awareness of the program, significantly increased participation in the notification system, and encouraged local media to broadcast alert messages and pollution reduction tips.

#### AQHA Banner Campaign

The Air Quality Health Alert program is visually reinforced through a banner campaign whereby participating organizations display AQHA banners at their facilities on alert days. Organizations are encouraged to display their banners in public areas. In February 2006, City of San Antonio Councilman Chip Haass, with support from his fellow councilmen, initiated a campaign to display banners at all City facilities. As part of

Figure 1. Bus placards and posters encouraged participation in the AQHA program.



their commitment to improving air quality in the San Antonio region and protecting the welfare of children and other citizens, they also initiated an Air Quality Health Alert banner campaign for schools. With funding from the City Council districts, this program provided banners to all public and private schools in San Antonio participating in the Air Quality Health Alert notification system. During 2006, AACOG staff distributed AQHA banners to 420 schools in San Antonio. The momentum initiated from the Councilman's efforts spanned political boundaries and a number of schools outside of San Antonio and Bexar County purchased banners as well.

#### AQHA Education Program

Staff developed educational materials for schools to supplement the banner campaign. These included school packages containing information about ozone air pollution in the San Antonio region, descriptions of AACOG's school-related air quality programs, and health tips for AQHA days. Both English- and Spanish-versions of the materials were offered to schools.

In February 2007, AACOG hosted a school nurse workshop in conjunction with the South Texas Asthma Coalition. Nine school districts participated in the program, which had as a goal, the development of an Asthma Action Plan (AAP) template that could be used by all schools in the region. The AAP is completed by an asthmatic student's physician and includes a section noting preferred activity levels on Air Quality Health Alert days. Fifteen thousand copies of the

AAP were printed by sponsoring organizations and distributed to 10 school districts in the region.

The important link between ozone and pediatric asthma has been embraced by the school districts in the AACOG Region. The Asthma Coalition of Texas (ACT) is considering adopting AACOG's air quality programs (e.g. AQHA banner) and supplemental materials as a prototype for the State of Texas.

Figure 2 displays some of the AQHA program materials developed by staff between 2003 and 2007.

Figure 2. Example of materials used to promote the Air Quality Health Alert program and encourage voluntary emission reductions.



CAN IMPROVE AIR QUALITY YEAR-  
ROUND BY DOING THE FOLLOWING:

MEJORAR LA CALIDAD DE AIRE TODO EL  
AÑO HACIENDO LO SIGUIENTE:

### Air Quality Media Programs and Events

AACOG conducts air quality outreach through various channels: media, events, and presentations. Annually, outreach staff work with local advertising representatives to purchase TV, radio, and print advertising to promote awareness of air pollution issues such as health, pollution sources, and measures to improve air quality.

#### Advertising Campaigns

The Commute Solutions program, supported by TxDOT, provides funding to develop a paid advertising campaign focusing on transportation-related air quality messages. To leverage resources and emphasize consistent messages, AACOG aired English- and Spanish-language advertisements developed by Drive Clean Across Texas (DCAT). Texas Transportation Institute's (TTI) Drive Clean Across Texas program purchases radio and television airtime in the San Antonio region as well as other nonattainment and near-nonattainment regions of Texas. To maintain consistency and reinforce DCAT's air pollution messages, AACOG typically airs TTI-developed ads and schedules run times for weeks between and after DCAT's campaigns.

#### Other Media Efforts

In addition to a paid advertising campaign, AACOG engages the media in air quality efforts by providing radio and television interviews, writing and distributing news releases, conducting radio remotes, and creating public service announcements that are distributed to radio and television statements throughout the region. The media are provided copies of AIR Committee agendas prior to meeting dates and are encouraged to attend AACOG-sponsored functions such as air quality health fairs and ozone season kick-off events. Appendix A provides a detailed list of media efforts for 2007.

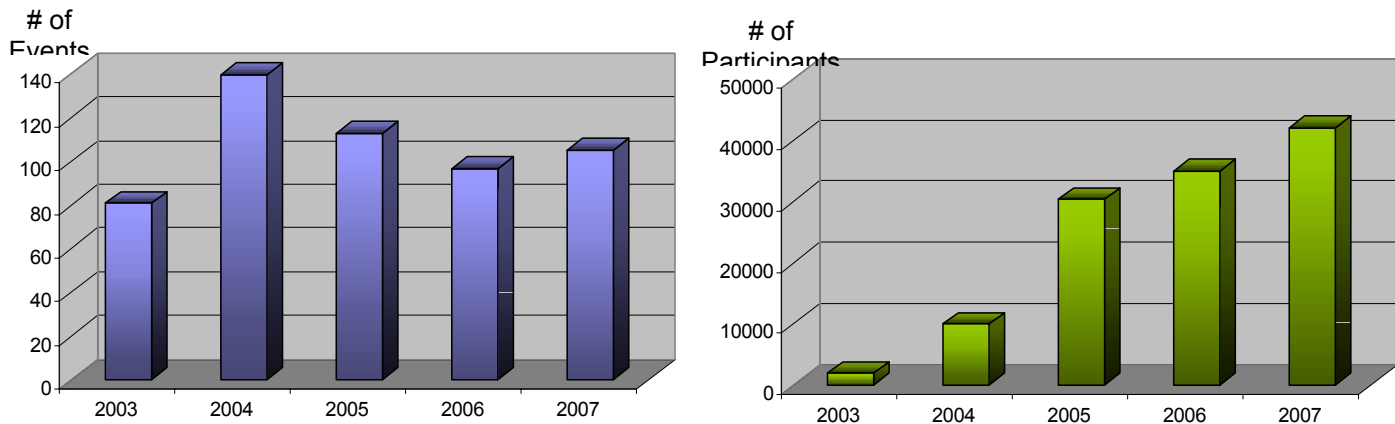
A new media package was developed in 2006 that provided background information on local air quality issues and described local measures to reduce pollution. The media package (section C-1) was distributed to media representatives at press conferences, editorial board meetings, and interviews.

#### Participation in Events

Staff attends a number of outreach events and presentations throughout the year. Many of the events are health- or environmentally-related. On average, AACOG's outreach staff promotes air quality messages at more than 100 events each year. Since 2003, the number of events attended by staff ranged from 81 in 2003 to 140 in 2004. In recent years staff has focused on identifying and participating in events that draw large and demographically diverse audiences.

Consequently, the number of participants attending events in which staff promoted air quality messages has steadily increased each year since 2003, as shown in figure 3.

Figure 3. Annual number of outreach events attended by staff between 2003 and 2007 compared to annual number of participants reached at events.



Some of the most well attended events in which staff participated between 2003 and 2007 include CPS Energy's annual *Live Green Fest* (>4,000 participants), the annual Hispanic Health Fair (>2,500 participants), and Time-Warner Cable's *Movie in the Park* series (>1,000 participants). Staff distributed air quality materials based on audience demographics, taking into account the purpose of the event, the target age group, and other factors. In certain instances, outreach materials were developed specifically for an event audience. Figure 4 provides examples of materials and air quality educational games developed for a specific event: Time-Warner Cable's *Movie in the Park* conducted on September 8, 2007.

#### AACOG Outreach Events

AACOG outreach staff organized and conducted a number of events focusing on air quality in the region. The events provided AACOG an opportunity to inform the public about measures to reduce exposure to air pollution in order to protect health and ways to improve air quality. Most events are conducted during the annual ozone period – April 1 – October 31 – beginning with ozone season kickoff events.



Figure 4. Examples of outreach materials developed by AACOG staff to promote air quality messages at Time Warner Cable's Movie in the Park event featuring the film *The Wizard of Oz*.



### Key Accomplishments 2003 - 2007

Key accomplishments during the 2003-2007 time period include steady increases in the number of people reached through events, as described above, and significant increases in the number of visitors to AACOG's air quality web pages.

#### Clean Air Drive

In 2006, AACOG obtained a new domain name to display air quality information:

CleanAirDrive.com. The new name was chosen because it was deemed easier to remember and relate to air quality. While air quality information can still be accessed through AACOG's home web site, the agency's CleanAirDrive site is devoted solely to air quality information and outreach. In January 2007, the new Clean Air Drive site had 111 visitors. Through promotion by AACOG, the City of San Antonio, Bexar County, the San Antonio Water System, CPS Energy and a number of other organizations, the number of visitors to CleanAirDrive during July, six months later, was nearly 96,000.

#### Fresh Air Friday

AACOG conducted "Fresh Air Friday" on July 7, 2007, an event modeled after Fresh Air Friday events held in Austin and Houston. The event, conducted during the lunch hour in a downtown park, attracted banking and other professionals, medical workers, and government staff, targeting an audience that may be missed during typical weekend events. The event will be repeated at least annually in similar locations.

#### River Cities RideShare

In 2007, AACOG purchased an automated rideshare matching service. By logging onto RiverCitiesRideshare.com, commuters can immediately identify potential carpool partners. AACOG partnered with the Capital Area Metropolitan Planning Organization in Austin to purchase the ridematching service. The site covers the Austin and San Antonio regions and is jointly maintained and promoted by the two agencies.



Air quality technical assistance to local industries

AACOG launched the Alamo Clean Air Partnership (ACAP) program in 2005 to enlist support for clean air measures from the business community. The cornerstone of the ACAP program is a Microsoft Excel spreadsheet that quantifies the emissions reductions associated with a wide range of strategies that are in place or under consideration by local businesses, industries, government agencies, and organizations. Businesses that participate in the program can either provide the completed database to AACOG or provide staff with the data necessary for AACOG personnel to develop a database on their behalf. The completed spreadsheets provide a baseline or summary of the organization's current emissions inventory and the emissions reductions associated with their proposed or implemented strategies.

Likewise, AACOG staff provides technical assistance to regional fleets through its Clean Cities program. The goal of the Alamo Area Clean Cities Coalition is to develop private and public partnerships to further the alternative fuels market presently in existence in San Antonio and the surrounding region, as well as develop the other Clean Cities petroleum reduction technologies. The Coalition provides assistance in seeking and acquiring financial resources that will result in implementation of projects that promote Clean Cities technology areas.

AACOG conducts workshops to address specific topics such as fleet maintenance, alternative fuels, energy efficiency, and other measures that can help business and industry practice emission reduction measures. Examples include a *Greening Your Business* seminar and a series of fleet maintenance workshops in 2006 and a series of alternative fuels workshops and meetings in 2007.

Section C-2 of this appendix describes examples of the technical assistance and other outreach/educational efforts of AACOG since January 2006.

### Air quality educational program

Air quality education is one of the most important outreach activities conducted by staff. It is an ongoing effort that takes a variety of forms from technical information provided to elected officials at Air Improvement Resources Committee meetings, city council meetings, and commissioners' courts to school classrooms. The air quality educational program provides information to all age groups regarding causes of air pollution, dispersion of pollutants, health impacts, and measures to improve air quality.

The student education program organized by staff encourages students to develop a sense of responsibility for their actions – including driving and other emission-generating activities. Oftentimes students share these lessons with parents and other family members, increasing substantially the number of people that receive the air quality messages.

An Air Quality and Transportation curriculum was organized from materials developed by the Alliance to Save Energy, Department of Earth Science at the University of Iowa, Energy Information Administration, U.S. Environmental Protection Agency, Northwestern Indiana Regional Planning Commission, Texas Commission on Environmental Quality, Texas State Energy Conservation Office, and West Michigan Clean Air Coalition. The curriculum includes lessons and activities for kindergarten through 12<sup>th</sup> grade and covers such topics as 1) what air and air pollution are, 2) how transportation affects air quality, and 3) the role of meteorology in forecasting air pollution. Staff plans to update the three-year old program with current data and have the curriculum reviewed by professionals for adherence to Texas Essential Knowledge and Skills. The revised curriculum will be available in 2008. The current K-12 educational package is available on AACOG's web site. Teachers may also contact staff for hard copies of the curriculum.

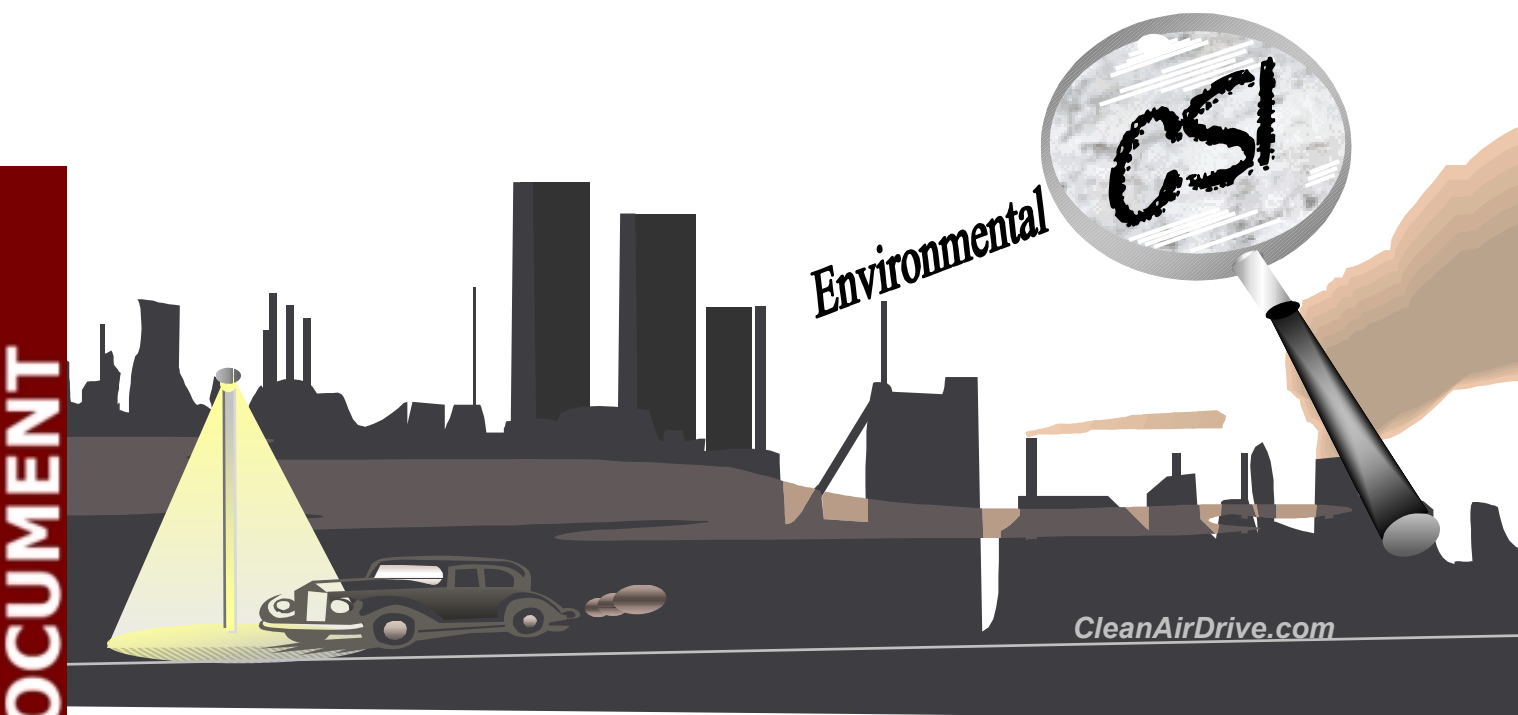
During the summer of 2007, AACOG began offering kid's Air Action Team activity kits that contain educational materials from multiple educational/training organizations. The kits are promoted as materials to keep kids occupied while traveling during the summer and as a fun, after school activity during the rest of the year.

A series of lesson plans for middle school students that focuses on solving the *Dirty Air Crimes* is under development by staff. The lessons guide students through various investigations regarding a list of suspects (based on the *Dirty Dozen* gang developed by the New York

Department of Environmental Quality), dirty air evidence, and crime stopping measures.

Environmental CSI lessons are based on activities developed by instructional organizations.

Environmental CSI will debut in 2008.



#### K-12 Curriculum

Schools can request K-12 air quality curriculum from AACOG that covers air quality and transportation lessons. Staff is available to provide lessons during classes or make presentations to teachers and staff. AACOG has a number of other educational materials in the form of flyers, posters, and web pages. Most materials are available in English and Spanish versions.

## Other Entities

### Air Quality Health Alert program and employee awareness programs

Local jurisdictions and businesses actively sought measures to educate their staff and communities about air quality and implemented measures to reduce ozone-forming emissions. Furthermore many employers in the AACOG region, particularly local governments, adopted policies limiting emission-generating activities on Air Quality Health Alert days.

### AQHA Program Participation

Between 2003 and 2007 the number of organizations – local governments, media, schools, and businesses -- participating in the AQHA program more than doubled. Local governments and organizations typically notify their employees by e-mail when an Air Quality Health Alert is forecast. The alert notifications to staff are accompanied by messages encouraging employees to carpool, ride the bus, avoid drive-through lanes, and adopt other measures to improve air quality.

Many local governments implemented additional measures to help improve regional air quality during Air Quality Health Alerts and year round. Examples include the development of AQHA policies, such as the City of San Antonio's *Air Quality Health Alert Plan 2007* provided as section C-3 of this appendix. The document outlines specific policies for AQHA days intended to reduce emission of NO<sub>x</sub> and VOC from the City's maintenance activities and fleet operations. Another example is Bexar County's transit program that provides their employees free bus rides to work in order to discourage them from commuting in single occupant vehicles.

Entities participation in the AQHA program often goes beyond notifying employees and encouraging their adoption of clean air measures. Many local entities encourage the public to respond as well. For example, the City of San Antonio (figure 5), Bexar County, and most public/private schools in Bexar and Comal counties ensure that visitors are aware of alerts by displaying AQHA banners in public areas such as parking lots and building exteriors. The San Antonio District of TxDOT displays alerts and tips for reducing air pollution on their lighted highway signs. Municipal governments, schools, and other organizations conduct community environmental events and health fairs in which AQHA materials and other air quality information are distributed. And many organizations including Comal County (figure 6), the City of San Antonio, and the San Antonio Water System devote entire web pages to displaying air quality information.



Figure 5. AQHA banner displayed at the City of San Antonio's Northwest Service Center. The City purchased more than 100 banners to display at their facilities on alert days.

Figure 6. Comal County's Air Quality web page, as displayed on 11/27/07



### Clean Air Gauge

In December 2006, the Air Improvement Resources Executive Committee suggested staff develop a visual symbol to indicate the fourth highest 8-hour ozone concentration recorded in the area during the 2007 ozone season. With a fourth highest 8-hour ozone average of 86

parts per billion (ppb) in 2005 and 87 ppb in 2006, the fourth highest average in 2007 had to remain below 82 ppb in order for the region to remain in attainment of National Ambient Air Quality Standards. The AIR Committee requested a symbol that would readily indicate to the public the point at which the nonattainment threshold would be reached and where the region stood with regard to the threshold.

AACOG staff, with input from the AIR Public Education Committee, developed the Clean Air Gauge (figure 7) to indicate the *red zone* of nonattainment. The gauge was a dynamic image updated each occurrence of an increase in the fourth-highest 8-hour ozone concentration for the region during the 2007 ozone season (indicated by the position of a needle on the gauge). Other organizations were encouraged to display the Clean Air Gauge on their web pages by linking to AACOG's web-based gauge, thereby ensuring all gauge images were automatically updated and displayed the same information, regardless of web site.

As of August 2007, the following organizations are displaying the Clean Air Gauge on their web sites:

- San Antonio Water System: <http://www.saws.org/environmental/cleanair/>
- San Antonio-Bexar County Metropolitan Planning Organization:  
[http://www.sametroplan.org/pages/Air\\_Quality/MPOOzone.html](http://www.sametroplan.org/pages/Air_Quality/MPOOzone.html)
- TransGuide: <http://www.transguide.dot.state.tx.us>
- City of San Antonio: <http://www.sanantonio.gov/enviro/EMD/AirQuality.asp>
- Palo Alto College <http://www.accd.edu/pac/htm/Community/publicaffairs/walkandroll/>
- Drive Clean Across Texas:  
[http://www.drivecleanacrosstexas.org/other\\_aq\\_programs/partner\\_programs/san\\_antoni\\_o.stm](http://www.drivecleanacrosstexas.org/other_aq_programs/partner_programs/san_antoni_o.stm)
- VIA Metropolitan Transit: <http://www.viainfo.net/Community/Green.aspx>
- Bexar County: <http://www.bexar.org/>
- City of Boerne: <http://www.ci.boerne.tx.us/>
- Comal County Engineers: <http://www.cceo.org>
- Alamo Regional Mobility Authority: <http://www.alamorma.org>
- Comal County: <http://www.co.comal.tx.us/AirQuality.htm>

AACOG: <http://www.aacog.com/>

AACOG/AIR <http://www.aacog.com/air/default.asp>

CleanAirDrive [www.cleanairdrive.com](http://www.cleanairdrive.com)



Figure 7. The Clean Air Gauge (right) displayed by AACOG and other organizations. Advertisements by CPS, such as the bus shelter ad pictured at left, as well posting of the Clean Air Gauge by government agencies boosted the number of visitors to the Clean Air Drive web site from 111 in January 2007 to nearly 96,000 by July 2007.



#### Summary of AQHA programs by other Entities

The following table summarizes participation in the AQHA program by the signatories to the Early Action Compact for the San Antonio Region as well as members of the Air Improvement Resources Advisory Committee. The table is not necessarily a complete list of all AQHA activities by a particular organization, but rather a sample of activities in which the organizations are engaged. Neither does the table list all entities participating in the program.



	Activity	Web Links (Current as of 11/27/07)
<b>Bexar County</b>		
✓	Broadcasts AQ Health Alerts to staff (e-mail) and public (web)	
✓	Displays Clean Air Gauge	Displayed on home web page <a href="http://www.co.bexar.tx.us/">http://www.co.bexar.tx.us/</a>
✓	Provides air pollution prevention tips	Provides link to tips on AACOG's Clean Air Drive site <a href="http://www.co.bexar.tx.us/">http://www.co.bexar.tx.us/</a> (below Clean Air Gauge)
✓	Displays AQHA banners at County facilities	
<b>City of Floresville</b>		
✓	Broadcasts AQ Health Alerts to staff	
<b>City of New Braunfels</b>		
✓	Displays air quality information	Provides link to NOAA web site that provides AQ forecast: <a href="http://forecast.weather.gov/MapClick.php?CityName=New+Braunfels&amp;state=TX&amp;site=EWX&amp;textField1=29.7043&amp;textField2=-98.1174&amp;e=0">http://forecast.weather.gov/MapClick.php?CityName=New+Braunfels&amp;state=TX&amp;site=EWX&amp;textField1=29.7043&amp;textField2=-98.1174&amp;e=0</a>
<b>City of San Antonio</b>		
✓	Broadcasts AQ Health Alerts to staff (e-mail) and public (web)	
✓	Displays air pollution & health information	<a href="http://www.sanantonio.gov/enviro/emd/Ozone_&amp;_health.asp">http://www.sanantonio.gov/enviro/emd/Ozone_&amp;_health.asp</a>
✓	Displays Clean Air Gauge	<a href="http://www.sanantonio.gov/enviro/emd/AirQuality.asp">http://www.sanantonio.gov/enviro/emd/AirQuality.asp</a>
✓	Provides air pollution prevention tips	<a href="http://www.sanantonio.gov/enviro/emd/Pollution_Prevention_Tips.asp">http://www.sanantonio.gov/enviro/emd/Pollution_Prevention_Tips.asp</a>
✓	Implements AQHA procedures	<a href="http://www.sanantonio.gov/enviro/pdf/Air_Quality_Health_Alert_Plan_2007.pdf">http://www.sanantonio.gov/enviro/pdf/Air_Quality_Health_Alert_Plan_2007.pdf</a>
✓	Distributes press releases on AQHA program and related topics	Example: <a href="http://www.sanantonio.gov/news/NewsReleases/nrAQHA06.asp">http://www.sanantonio.gov/news/NewsReleases/nrAQHA06.asp</a>
✓	Conducts employee awareness program	
✓	Displays AQHA banners at City facilities	
<b>City of Seguin</b>		
✓	Provides air pollution prevention tips	<a href="http://ci.seguin.tx.us/planning/environmental%20services.pdf">http://ci.seguin.tx.us/planning/environmental%20services.pdf</a>
✓	Broadcasts AQ Health Alerts to staff	

Comal County		
✓	Broadcasts AQ Health Alerts to staff and public (web)	
✓	Displays air pollution & health information	<a href="http://www.co.comal.tx.us/AirQuality.htm">http://www.co.comal.tx.us/AirQuality.htm</a>
✓	Displays Clean Air Gauge	<a href="http://www.co.comal.tx.us/AirQualityInformation.htm">http://www.co.comal.tx.us/AirQualityInformation.htm</a>
Guadalupe County		
✓	Broadcasts AQ Health Alerts to staff	
Wilson County		
✓	Broadcasts AQ Health Alerts to staff	

Quantifiable, voluntary emission reduction programs

Municipal and county governments in the four-county EAC region sought and implemented quantifiable emission reduction measures targeting a range of emission sources. The remainder of this section lists emission reduction measures adopted by local agencies and partnering organizations since the EAC agreement was signed in 2002. This is not a complete list of measures implemented by local entities, rather, a sample of the types and ranges of measures adopted as of December 2007.

## Bexar County:

- Adopted a bus program that allows county employees to ride VIA buses free of charge. Likewise, people receiving jury summons may ride the bus to county courts free of charge.
- Adopted energy efficiency program by:
  - replacing HVAC chillers on all major buildings
  - installing (county-wide) automated energy management systems in buildings
  - installing 30,000-gallon capacity water heater in adult detention annex
  - financing San Antonio Development Corporation's installation of solar thermal and PV systems, rain harvesting equipment, and advanced heating/cooling system on 8 housing units
  - helping to create and fund the Metropolitan Partnership for Energy
- Constructed an alternative fueling station that dispenses ethanol and propane (open to the public),

## City of San Antonio:

- Approved replacement of 15-diesel powered refuse trucks with CNG-powered models
- Implemented a hybrid vehicle parking program in which hybrid vehicles can park at downtown meters free of charge
- Replaced many of the fleet's gasoline-powered vehicles with hybrid-electric vehicles
- Implemented an incentive program that encourages taxi companies to replace gasoline-powered vehicles with hybrid-electric models
- Adopted energy efficiency program by:
  - replacing air conditioning and heating units at eight of its facilities
  - installing motion sensors in all meeting rooms in the Alamodome
  - installing 54 timer switches on lights in mechanical rooms

- replacing 1500 incandescent bulbs with fluorescent lights in Parks department
- converting exit signage to LED

Comal County:

- Implemented an energy efficiency program by:
  - installing programmable thermostats at County Road Department facilities
  - changing all lighting fixtures from T12 fluorescent lamps and magnetic ballasts to T8 fluorescent lamps and electronic ballasts
  - installing motion sensors in all offices and conference rooms
  - changing settings on computers to improve energy efficiency

Seguin:

- Implemented an energy efficiency program by:
  - completing electrical upgrades that increased energy efficiency of pumps, switch boxes, lighting ballasts, electric motors, and A/C air handlers
  - instituting employee energy awareness program

CPS Energy

- measures at coal-fired plants
- alternative fueled fleets
- energy efficiency – 21.24% decrease in 2005 compared to 2001 baseline

VIA Metropolitan Transit

- Implemented a vanpool program that offers services to businesses in the San Antonio area allowing employees to commute in groups of 6 – 15 people
- Implemented an energy efficiency program recognized the Texas Comptroller of Public Accounts



## **Air Improvement Resources Committees and AACOG**

### Continue public involvement through public education programs

AACOG and agencies represented by the AIR Improvement Resources Committees conduct many events, conferences, and workshops to provide information to the public about air pollution and measures to improve air quality. The most successful of these events involved collaborations between two or more organizations. Examples of collaborations include the annual Live Green Fest, ozone season kickoff events, council district fairs, and other events as described below:

#### **CPS Energy**

To promote sustainable energy use, CPS Energy conducts the annual “Live Green Fest.” The Fest is typically held on the first Saturday in April and often coincides with AACOG’s ozone season kickoff events. Beginning in 2006, the two agencies merged their events into Live Green Fest/Clean Air Drive. Prior to 2006, the individual events drew an estimated 1,000 participants. Since combining Live Green Fest and the ozone season kickoff, participants have numbered more than 4,000 annually.

The Clean Air Drive section of the annual event includes air-related exhibits by a number of agencies and organizations including the San Antonio-Bexar County Metropolitan Planning Organization, the San Antonio Water System, VIA Metropolitan Transit, the Texas Independent Automotive Association, the City of San Antonio, and Drive Clean Across Texas. Activities that teach children about air quality are important components of the event.

#### **City of San Antonio**

Many of the council districts in San Antonio conduct annual health or services fairs. The fairs feature exhibits by various health and service organizations. AACOG is typically invited to participate in the fairs by distributing air quality educational materials to attendees.

The City makes air quality educational information available to the public in other ways as well. An example is the City’s web site, which features environmental pages including an “Air Pollution Prevention Tips” page.<sup>1</sup>

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<sup>1</sup> Available at [http://www.sanantonio.gov/enviro/EMD/Pollution\\_Prevention\\_Tips.asp](http://www.sanantonio.gov/enviro/EMD/Pollution_Prevention_Tips.asp)

#### San Antonio-Bexar County Metropolitan Planning Organization

The Metropolitan Planning Organization (MPO) conducts open house sessions for their transportation planning activities. Air quality considerations are addressed at many sessions, either directly or by providing materials to participants. Organizations, such as AACOG, support the MPO's efforts by providing exhibits and related materials at MPO events. Furthermore, the MPO places air quality information prominently on their web site providing easy access to the public.

#### Multiple Organizations

A number of air quality-related conferences and workshops have been conducted through partnerships among local governments, utilities, and other organizations. The conferences have been successful in drawing large numbers of participants and reaching diverse audiences. Recent examples include the 2007 Clean Air through Energy Efficiency conference in December 2007, the Biodiesel conference in September 2007, and the San Antonio Mobility conference in February 2007.

### Provide opportunities for public involvement in the planning process

The EAC for the San Antonio MSA addressed public involvement in the air quality planning process by committing the signatories and AACOG to seek public input through three distinct venues: 1) regularly-scheduled AIR Committee meetings, 2) public meetings and workshops, and 3) queries from the public regarding EAC planning activities posted on AACOG's web site.

#### AIR Committee Meetings

Every meeting of the AIR Executive and Advisory Committees is a public meeting, with notification of the meeting time and location published by AACOG according to the Texas Open Meetings Act. AACOG provides notice of each meeting to the secretary of state, the county clerk of Bexar County, and posts notice in AACOG's main administrative offices in a place readily accessible to the general public at all times for at least 72 hours before the scheduled time of the meeting. (Although the AIR Executive and the AIR Advisory Committees are separate committees, they typically hold joint committee meetings at least once a month. In each case, the notification process is as described above.) The AIR Executive Committee is the planning committee for air quality planning under the Early Action Compact in the San Antonio region. The AIR Executive Committee's meetings satisfy the requirement in the EAC that planning meetings will be open to the public, with posted meeting times and locations.

During the first year the EAC was in place, the AIR Committees and AACOG staff identified a wide range of emission reduction strategies and evaluated their merits in terms of cost-effectiveness and benefit to the region. These strategies were presented during public meetings conducted in four counties throughout 2003. In addition to information about control strategies, the public meetings and workshops were designed to give the public background information and updates on topics such as air quality health issues, applicable federal and state law, current/historic ozone levels, the local response provided by the Early Action Compact, the role of local elected officials, of AACOG's committees, of the public, of the state and federal governments, timelines, deliverables under the EAC.

The meetings and workshops were advertised in the San Antonio Express-News, New Braunfels Herald-Zeitung, Seguin Gazette-Enterprise, and Wilson County News newspapers once before any given Workshop. Additional notifications were distributed by email. Table 1 provides information about participation at the public meetings.



Table 1. Public meetings held to engage public participation in the air quality planning and strategy selection process:

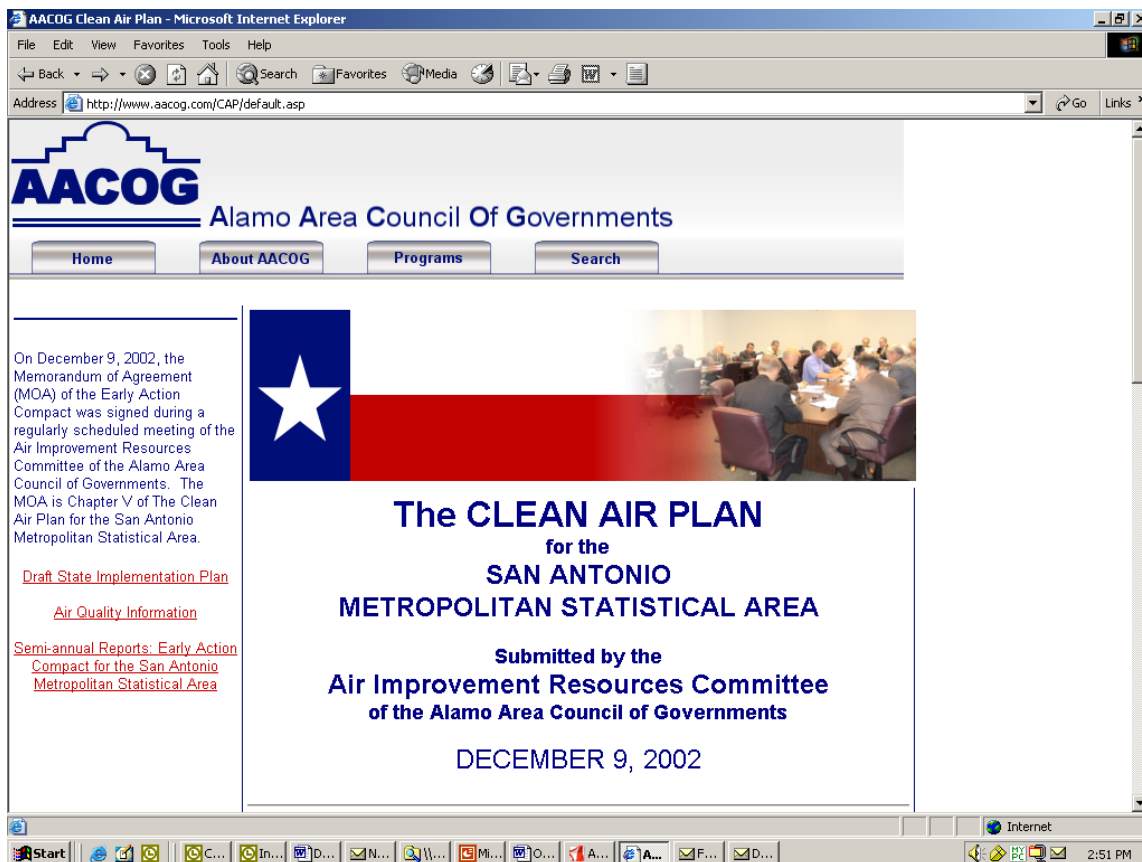
Date/Time	Location	County	Public Participation: Attendance/ Requests to Speak
Wednesday, January 22, 2003 6:00 – 7:30 pm	AACOG Board Room	Bexar	Researching records
Saturday, February 22, 2003 9:00 – 10:30 am	AACOG Board Room	Bexar	22/3
Wednesday, March 19, 2003 6:30 – 8:00 pm	Landa Haus, New Braunfels	Comal	32/21
Saturday, April 12, 2003 9:00 – 10:30 am	Seguin City Council Chambers	Guadalupe	25/13
Tuesday, May 20, 2003 7:00 – 8:30 pm	Criminal Justice Center, Floresville	Wilson	25/9
Saturday, June 14, 2003 9:00 – 10:30 am	AACOG Board Room	Bexar	35/17
July 16, 2003	AACOG Board Room	Bexar	26/11
November 5, 2003	AACOG Board Room	Bexar	38/?
November 18, 2003	AACOG Board Room	Bexar	47/13

#### Web

By responding directly to AACOG through the AACOG website, <http://www.aacog.com/cap/>.

This webpage is designed so that citizens can give AACOG direct input regarding their assessment. These responses are also given to the elected officials. Any citizen can email the Director of Natural Resources, Peter Bella, at [pbella@aacog.com](mailto:pbella@aacog.com). Emailing the Director helps to maintain the dialogue between AACOG and the public.

AACOG continues to encourage public comment on the region's Clean Air Plan by posting semi-annual reports and meeting information on the AACOG web site.



Section C-1:  
Media Package

## Information Package

## Ozone 101

## Table of Contents

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<i>Causes of ground-level ozone</i>	2
<i>Consequences</i>	3
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<i>How SA measures up</i>	6
<i>Air quality trends</i>	7
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<i>Education and outreach</i>	10

## Critical Points:

- Consequences of a non-attainment designation (see page 3)
- The San Antonio area has a very **short** window of opportunity to improve air quality (see page 6)
- What's being done to improve air quality (see pages 6, 8, and 10)

## for the San Antonio Region

*Our air...what's up with that?*

Too many times during the summer months the answer to "what's up?" is ground-level ozone concentrations. Ozone pollution reduces lung function and is particularly harmful to children, the elderly, people who are active outdoors, and people with respiratory diseases such as asthma.

The best way to protect ourselves and our community from the harmful effects of ground-level ozone is to

- stay informed so that we know when concentrations reach unhealthy levels,
- avoid prolonged exposure when concentrations are high, and
- adopt measures that reduce the amount of ozone-forming emissions released into the air we breathe.

In addition to health issues, air pollution can have economic consequences that impact our region's use of federal highway funds and our ability to attract new businesses to the area.

As important as these health and economic issues are, there is confusion among the public about the extent of the problem in San Antonio



*Vehicle emissions and sunlight—an unhealthy combination*

and how air pollution can impact residents physically and financially.

One of the keys to improving the quality of life in our region is to ensure air quality information is available to the public so that residents can protect themselves and take measures to help reduce pollutant emissions. The Alamo Area Council of Governments (AACOG) recognizes the important role broadcast and print media plays in this regard and considers media a partner in the clean air campaign.

*Contact Information*

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## Ozone Basics

### *"Good up high, bad nearby"*

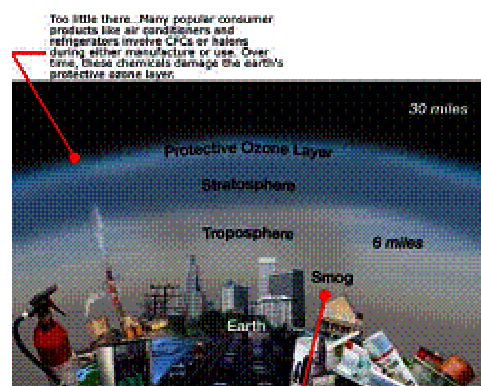
This catchphrase popularized by the U.S. Environmental Protection Agency describes the dual nature of ozone. The good qualities of ozone refer to the

chemical's ability to absorb and reflect UV-B radiation from the sun. Without ozone in our atmosphere, life as we know it could not exist. The flip side is that ozone is an

air pollutant. The chemical impairs the respiratory system and harms the environment.

The difference between "good" and "bad" ozone is strictly a matter of location. Ozone in the upper atmosphere — the ozone layer — protects us from solar radiation. Ground-level ozone, however, does more harm than good. Because of these harmful impacts, the federal government set standards for ground-level ozone and five other "criteria" pollutants to protect human health and the environment. Areas of the country that have unhealthy levels of the pollutants are designated "non-attainment" of the standards set by the

U.S. Environmental Protection Agency.



Too much here... Cars, trucks, power plants and factories all emit air pollution that forms ground-level ozone, a primary component of smog.

Source: U.S. Environmental Protection Agency

### *What causes ground-level ozone and why do concentrations sometimes reach unhealthy levels in the San Antonio region?*

Ozone forms when specific chemicals in the atmosphere are exposed to sunlight. These chemicals generally fall into two categories: nitrogen oxides and volatile organic compounds. Nitrogen oxides (NOx) are released into the air when fuels such as gasoline, diesel, and coal are burned. Volatile organic compounds (VOCs) typically enter the atmosphere through vaporization of products such as gasoline, paints, and solvents.

While man-made sources of NOx and VOC predominate in the San Antonio area, natural sources of the chemicals also contribute to local ozone levels. Vegetation is by far the largest natural source of the chemicals. Biogenic sources — primarily vegetation — contribute 49% of the VOCs and 5% of the NOx released into our air. The pie

charts on page 3 provide additional information on sources of air pollution and their percent contribution to the San Antonio region's "emissions inventory."

In addition to the contribution of local sources, a significant portion of the ozone detected at San Antonio-area monitors originates elsewhere. Air pollution can travel great distances, crossing state, international, and even continental borders. Because air pollution is so mobile, regions must also rely on reduction measures implemented in other regions to improve air quality locally.

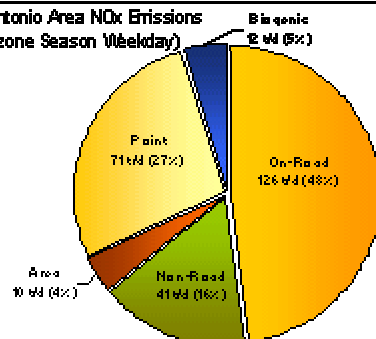
Just as we are affected by air pollution from other regions, pollutants emitted by activities in our region affect the air quality of other areas. Reducing local sources of NOx and VOC not only improves San

Antonio's air quality, but also helps regions impacted by our actions. The most significant action that will reduce ozone levels is the reduction of local pollution. It is always true that reducing pollution locally has a greater impact on local ozone than reducing pollution by the same type and level in distant regions.

Metereological conditions also influence the formation and dispersion of ground-level ozone. Weather conditions that contribute to elevated ozone concentrations include sunny skies, warm temperatures, low wind speeds, and high pressure systems. These conditions are prevalent during the summer months in south-central Texas. Consequently, ozone season in the San Antonio region extends from April 1 to October 31 each year.

## Ozone Basics

**2002 San Antonio Area NOx Emissions**  
(Average Ozone Season Weekday)



Sources of NOx emissions emitted in the San Antonio region (Bexar, Comal, Guadalupe, and Wilson counties) by source category.

Examples of

**On-road sources:** cars, trucks, motorcycles, buses, SUVs, 18-wheeler tractors

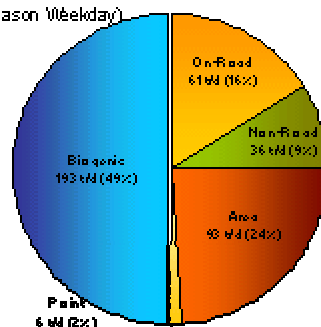
**Non-road sources:** gasoline-powered lawn equipment, construction and mining equipment, railroad engines

**Area sources:** Fires

**Point sources:** Power plants, cement kilns, refineries

**Biogenic sources:** Microbial activity in soil

**2002 San Antonio Area VOC Emissions**  
(Average Ozone Season Weekday)



Sources of VOC emissions emitted in the San Antonio region (Bexar, Comal, Guadalupe, and Wilson counties) by source category.

Examples of

**On-road sources:** gasoline-powered vehicles

**Non-road sources:** gasoline-powered equipment

**Area sources:** Power plants, refineries, large manufacturing operations

**Biogenic sources:** Vegetation

t/d = tons per day

### *Consequences of high ground-level ozone concentrations*

#### Human Health

Ozone can cause a variety of symptoms including coughing, sore/scratchy throat, pain with deep breath, fatigue, and reduced lung function. Ozone is linked with increases in hospital admissions and school absences.

Sensitive groups—children, the elderly, people who are active outdoors, and people with lung disease—are particularly vulnerable.

#### Environment

Another harmful impact of high ozone levels is its affect on vegetation. Ozone reduces agricultural yields, reduces the survival of tree seedlings, and increases plants' susceptibility

to disease and pests. When ozone-related damage is extensive, entire ecosystems are affected.

#### Economic Impacts

The consequences of high ozone levels don't end with health and environmental issues; there are economic consequences as well. Ozone levels that are consistently high enough to trigger a "non-attainment" designation from the federal government may be costly in terms of planning, implementation, and enforcement of control measures. Furthermore, failure to plan adequately puts a region's federal highway funds at risk.

"Health costs and lost productivity related to air pollution in Houston exceed \$3 billion annually."

- *Committee of Science, U.S. House of Representatives Field Hearing*

## Ozone Basics

**Companies generally avoid areas with air quality problems, the effect "makes it very onerous for a business."**

**-Dan Sieger**

**Toyota North American  
Spokesman**

### *Consequences of high ground-level ozone concentrations (continued from page 3)*

Economic growth may also suffer. New major stationary sources of air pollution are required to offset their potential to emit pollutants by securing emission reductions from nearby facilities at a ratio of at least one-to-one.

Likewise, established major sources of pollutants in non-attainment areas are required to offset increases in emissions when they modify existing facilities.

The offset requirements of the Clean Air Act's New Source Review program can increase a

facility's operational costs and may hinder a region's ability to attract new businesses.

Although it is not clear what types of control measures will have to be implemented if the San Antonio area goes into full non-attainment, the consequences of such a designation will no doubt impact the region in terms of health costs, environmental losses, and economic consequences.

### *Determining compliance with the federal ozone standard*

In 1997, the federal government revised the National Ambient Air Quality Standard (NAAQS) for ground-level ozone to make the standard more protective of human health and the environment.

Attainment under the revised standard is met when the three-year average of the annual fourth highest daily maximum eight-hour ozone concentration measured at each monitoring site in a community is less than 85 parts per billion (ppb).

Ground-level ozone concentrations in the San Antonio region are monitored by the Texas Commission on Environmental Quality (TCEQ) using Continuous Air Monitoring Stations (CAMS) placed at strategic locations in the San Antonio area. Measurements from the CAMS are transferred directly to the TCEQ. The data

undergo a verification process and are posted on TCEQ's air monitoring web site:

[http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr\\_monthly](http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly)



*Continuous Air Monitoring Station in northwest San Antonio*



## Air Quality in the San Antonio Region

### *Local air quality planning responsibility*

The Air Improvement Resources Committee (AIRCo) of the Alamo Area Council of Governments is the local entity charged with coordination and oversight of air quality planning in the region. The committee facilitates the completion of air quality studies, planning activities, and emission reduction plans for attainment under the 8-hour ozone NAAQS.

The AIRCo is a collaboration of committees lead by the primary planning body, the AIR Executive Committee. The Executive Committee membership includes local elected officials representing the counties and largest cities of the San Antonio Metropolitan Statistical Area (MSA).<sup>\*</sup> These officials direct research to develop air quality strategies and can create legislation within their local jurisdictions in order to implement region-wide strategies.

The AIR Executive Committee is supported by several subcommittees: the AIR Advisory

Committee, the AIR Technical Committee, and the AIR Public Education Committee.

Subcommittee membership includes representatives of business and industry, environmental organizations, technical support providers, school districts, transportation planning organizations, the public, municipal and county governments, and other political subdivisions.

The AIRCo works closely with the TCEQ and the U.S. Environmental Protection Agency to ensure compliance with air quality rules and regulations and to seek guidance for local planning and strategy implementation activities.

<sup>\*</sup>When the AIR committee was created, the San Antonio MSA consisted of Bexar, Comal, Guadalupe, and Wilson counties. Federal guidelines suggested MSAs as air planning regions.

#### Air Improvement Resources Executive Committee

Chair: Hon. Jay Mlikin

Hon. Nelson Wolff  
Hon. Dan Daniels  
Hon. Jim Traemblay  
Hon. Bruce Boyer  
Hon. Marvin Quinney  
Hon. Mike Wiggins  
Hon. Gaylan Schroeder

### *The Early Action Compact Agreement*

Recognizing the San Antonio region could have difficulty meeting the revised ozone standard (8-hour standard), the AIR Executive Committee directed the development of a Clean Air Plan for the region. The Committee's pre-planning culminated with the signing of an Early Action Compact agreement with the state and federal governments in December 2002.

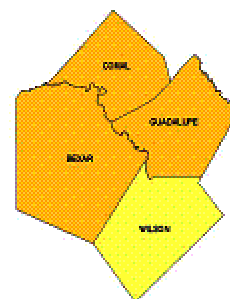
The Early Action Compact protocol was endorsed by EPA Region 6 several months prior to the signing of San Antonio's Agreement, and was designed to develop and implement control strategies, account for growth, and achieve and maintain the 8-hour ozone standard. As such, it represented a key component to finalizing the area's Clean Air Plan.

The Compact, signed by officials representing Bexar, Comal, Guadalupe, and Wilson counties and the largest municipalities in each of the four counties, was designed to enable a local approach to ozone attainment and to encourage

early emission reductions leading to expeditious attainment of the 8-hour ozone NAAQS.

An important feature of the Early Action Compact protocol is that it allows the EPA to defer the effective date of a non-attainment designation and related requirements as long as all Compact terms and milestones are met. The deferment allows Early Action Compact regions a window of opportunity to determine the success of their local clean air measures without the penalties associated with a full non-attainment designation, should the region fail the 8-hour ozone NAAQS.

On April 15, 2004, EPA published the initial list of non-attainment designations under the 8-hour ozone standard. Bexar, Comal, and Guadalupe counties were designated "non-attainment deferred." Wilson County, the remaining signatory of the San Antonio Early Action Compact was designated "attainment."



*San Antonio Early Action Compact Region. Darker shading indicates the non-attainment deferred counties as designated by the U.S. EPA on April 15, 2004.*

## Air Quality in the San Antonio Region

### *Clean air control measures*

In accordance with the Early Action Compact, local planners lead by the AIRCo developed a revision to the State Implementation Plan (SIP) for the San Antonio region. Among other topics, the SIP outlines steps that would be taken locally to improve our air quality including specific, quantifiable and enforceable emission reduction measures and an implementation and reporting timeline that must be met if the Early Action Compact is to remain valid until the termination date of December 31, 2007.

To determine the most suitable combination of air pollution reduction measures to implement locally, elected officials relied on analyses of numerous pollution reduction measures. The analyses compared strategy effectiveness, cost, and enforceability. Effectiveness was determined using computer modeling conducted by AACOG, TCEQ, and private contractors. Computer modeling of the clean air control measures accounted for air quality-related state and federal regulations as well as reduction

measures implemented in other regions.

Based on their analyses, the AIRCo recommended adoption of two regulations locally, that along with state and federally-mandated controls and emission reduction measures, would bring the San Antonio area into attainment of the eight-hour standard by the December 2007 deadline stipulated in the EAC.

The two clean air measures outlined in the San Antonio revision to the SIP target locally-generated VOC emissions. One requires the use of Stage I vapor recovery systems at gas stations with throughput of 25,000 gallons per month or more. Stage I equipment prevents the gasoline vapors from entering the atmosphere while tanker trucks refill the station's storage tanks. The second measure addresses pollutants from industries operating degreasing equipment and requires the use of low VOC solvents.

Both rules have been implemented and are being enforced through state and local agencies.

### *How San Antonio measures up*

The Early Action Compact agreement with the state and federal governments provides the San Antonio region a short window of opportunity to demonstrate that local air quality planning and emission reduction measures have resulted in regional air quality that meets federal standards.

The agreement terminates on December 31, 2007 and with it, the "non-attainment deferred designation." In 2008, the U.S. EPA will analyze data recorded at area monitors during the ozone seasons of 2005, 2006, and 2007 to determine the success of pollution reduction strategies on local air quality. If the 3-year average of the

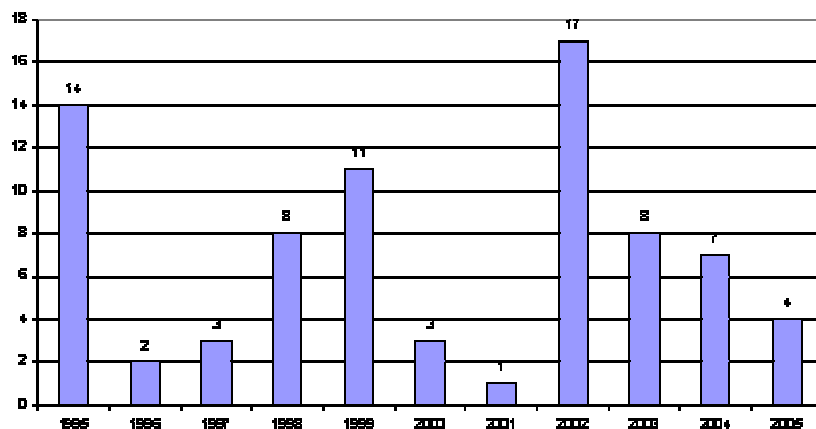
fourth-highest 8-hour average is 85 ppb or greater, the San Antonio area will be designated non-attainment and the region will have to comply with the requirements and regulations initiated by such a designation.

The fourth highest 8-hour average in 2005 was 86 ppb. The fourth highest 8-hour average in 2006 was 87 ppb. The fourth highest 8-hour average ozone measurement in 2007 will have to be less than 82 ppb in order to avoid a non-attainment designation in 2008.

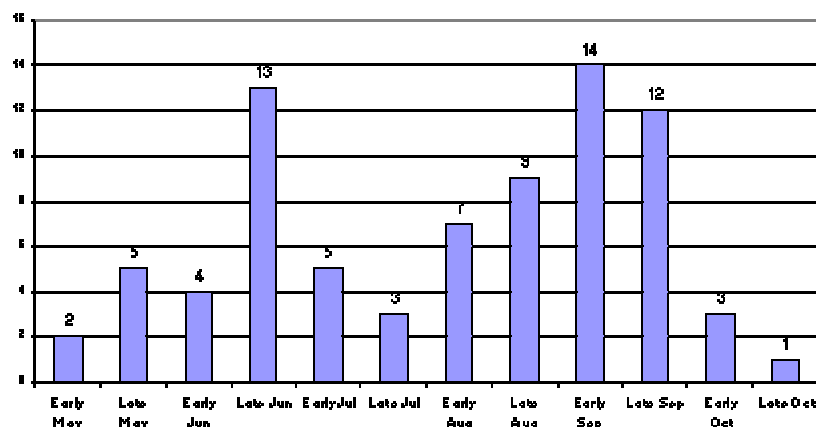
## Air Quality in the San Antonio Region

### *Air quality trends*

The severity of ground-level ozone concentrations varies from year-to-year as shown by the graphs below. Between 2002 and 2005, however, the trend was one of decreasing high ozone episodes in the San Antonio area.



**Historical Trends in Ozone Exceedances, SA Region Regulatory Monitors, 1995-2005**  
1st-15th of the month ("Early"); 16th-end of month ("Late")



**Seasonal Exceedances at Regulatory Monitors in San Antonio region, 1995-2005**

## VOL. I NO. 1

## Extra, extra

*Local efforts to clean our air*

A number of local business, industry, and government leaders have joined the clean air cause by voluntarily adopting initiatives to reduce air pollution emissions.

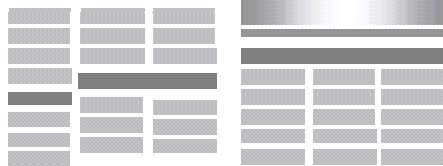
AACOG, in partnership with the City of San Antonio, developed the 2007 Clean Air Gauge (see below) to visually display where we stand in meeting federal standards. In order to comply with the standards, our fourth highest ozone average in 2007 must remain under 82 ppb. The Clean Air Gauge depicts 82 ppb and above as an unwanted RED ZONE of nonattainment. We invite all businesses and media interested in promoting air quality to post this image

on their websites.

The City of San Antonio adopted several programs that demonstrate their environmental leadership. In early 2006 the City began a pilot program that encourages the use of hybrid-electric vehicles by allowing hybrid drivers to park free at downtown meters. Another innovative measure by the City began with a commitment by AIR Executive Committee member Councilman Chip Haass to provide AIR Quality Health Alert banners to City schools and institutions. To date over 400 banners have been distributed to local schools under the Councilman's program along

## Clean Air News

## TxDOT wins 2006 Corporate Challenge



with information on protecting students' health during high-ozone episodes.

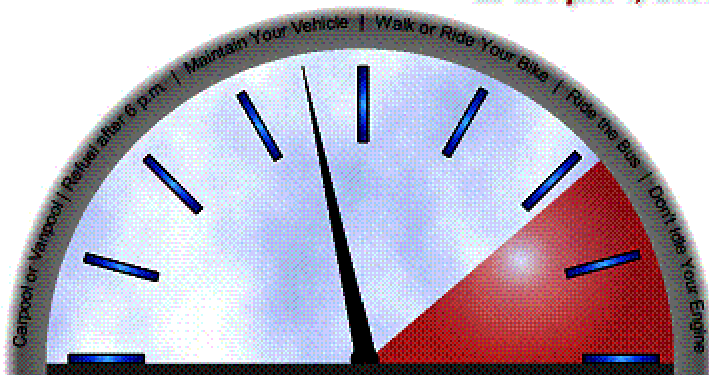
In October 2005, Bexar County, with assistance from AACOG's Alamo Area Clean Cities Coalition, opened the first publicly-accessible E85 fuel station in the State. E85 (85% ethanol, 15% gasoline) is a cleaner alternative to gasoline that can be used in flexible fuel vehicles. H-E-B increased the availability of E85 by establishing an ethanol corridor in Texas. During phase 1 of the project, H-E-B's Seguin station along with four other stores along I-35 began offering the alternative fuel in August 2006. This is good news for Texas drivers; the State has more flexible fuel vehicles than any other in the nation.

USAA is another green thinking corporate citizen. The organization's nationally-recognized employee carpooling program reduces vehicle emissions by more than 500 pounds per month.

TxDOT was recognized in July 2006 for winning the Walk & Roll Corporate Challenge. The Walk & Roll Challenge promotes the use of alternative forms of commuting to and from work. TxDOT received the Walk & Roll trophy by recording the highest alternative commute per employee ratio. For additional information on local efforts to improve air quality, reference the graph on the following page.

## Clean Air Gauge

as of April 1, 2007

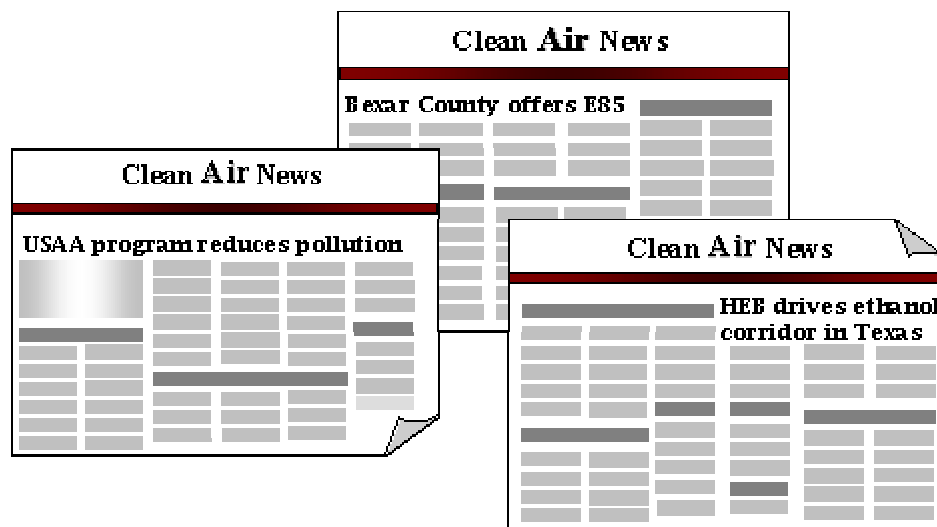


CleanAirDrive.com

2007 is a critical year for our region to meet federal air quality standards.  
Help keep us out of the RED ZONE!  
Find out how at CleanAirDrive.com

SUMMER 2006

# Read all about it



The following provides a sample of the voluntary clean air efforts of local organizations.

	Energy Conservation	Alternative fuelvehicles	Hybrid electric vehicles	Employee Carpooling Program	Plant/John emission reductions	Low emission landscaping	AQHA day policies
City of San Antonio	X	X	X	X		X	X
CPS Energy	X	X		X	X		
USAA				X			
Valero	X			X			
HEB	X	X					
TXI					X		

## Information Package

*The Alamo Area Council of Governments conducts a variety of air quality education and outreach programs.*

*The following list provides short descriptions of each.*

### **Clean Cities**

The Alamo Area Clean Cities Program, created in coordination with the US Department of Energy, is a locally-based government and industry partnership. The goals of the program are to expand the use of alternative fuels and technologies, advance clean air measures, support energy security, expand refueling infrastructure, and promote fuel economy.

### **Commute Solutions**

The Alamo Area Council of Government's Commute Solutions Program helps businesses, schools, and organizations implement commuter programs for their employees or students. Since no single commuter solution fits every commuter, AACOG offers assistance for establishing a variety of corporate commuter programs. These include carpooling, vanpooling, telecommuting, flexible work scheduling, and other options. AACOG staff is available to provide presentations and materials on Commute Solutions programs, conduct a matching service for employees or students interested in participating in a carpool/vanpool, and discussing tax-related benefits and other financial benefits of commuter programs.

### **Alamo Clean Air Partnership**

The Alamo Clean Air Partnership is a voluntary association of businesses, government agencies, schools, and organizations in the San Antonio area that demonstrate environmental leadership by adopting measures to improve our quality of life. The program primarily focuses on and promotes measures that reduce air pollution emissions. Participating organizations may adopt any number of measures including participation in the Air Quality Health Alert program (see description below), establishing an alternative-commuting program, practicing energy conservation, operating cleaner-burning fleet vehicles, xeriscaping, and a variety of other strategies. AACOG hosts a series of workshops and seminars (such as the periodic "Greening Your Business" series) to assist involved community leaders in wise environmental decision-making.

### **Air Quality Health Alert (AQHA)**

The Air Quality Health Alert program was established to alert area residents when air pollution levels are high. AACOG receives notification from the State the day before air pollution is forecast to reach unhealthy levels. Staff immediately forwards the alert to schools, the media, businesses, government agencies, and any other organizations or individuals requesting to be placed on the notification list. The alert from AACOG is accompanied by information on sensitive groups, guidelines for reducing health risks from exposure to air pollution, and methods to reduce air pollution emissions.

### **Air Quality K-12 Educational Program**

The Air Quality Educational program was created to increase awareness of regional air quality issues and the health and environmental consequences of air pollution. Examples include medical posters (English and Spanish), AQI cards (English and Spanish), an extensive selection of air quality lesson plans for grades K-12, and brochures that address air pollution, health, and sensitive groups.

*For more information on these programs, visit [CleanAirDrive.com](http://CleanAirDrive.com).*



Section C-2:

Air Quality Outreach Technical Memorandum





## Air Quality Outreach & Education



In the San Antonio Region  
*January 2006 through August 2007*

A Technical Memorandum

**August 2007**

Prepared with funding from the  
Texas Commission on Environmental Quality

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<b>Title:</b> Air Quality Outreach and Educational Programs in the San Antonio Region: January 2006 through August 2007		<b>Report Date:</b> August 31, 2007	
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<b>Sponsoring Agency Name &amp; Address:</b> Texas Commission on Environmental Quality			
<b>Supplementary Notes:</b> N/A		<b>Date of Approval:</b>	<b>Reference No.:</b>
<b>Abstract:</b> The Natural Resources staff of the Alamo Area Council of Governments conducts a variety of air quality outreach and educational programs to disseminate information about the causes of, health effects from, and measures to reduce ground-level ozone. The air quality outreach/education programs are funded through grants from the Texas Commission on Environmental Quality, the Texas Department of Transportation, and the State Energy Conservation Office. AACOG staff applies various measures to determine the effectiveness of the outreach/education efforts including conducting community surveys and tracking such data as web site visitations, air quality-related inquiries, press items, and participation in events and programs. Particular emphasis is placed on gathering data that can be quantified in terms of emission reductions. Some of the Agency's outreach programs, such as the Alamo Clean Air Partnership and the new River Cities RideShare, are easily measured in terms of success because they require participants to submit information to AACOG regarding their emission reduction measures.			
<b>Related Reports:</b>	<b>Distribution Statement:</b> Alamo Area Council of Governments, Natural Resources Department	<b>Permanent File:</b> Alamo Area Council of Governments, Natural Resources Department	
<b>No. Pages:</b> ____ (Including Appendices)	<b>Cost of Report:</b>	<b>Reproduction Cost:</b>	

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## Executive Summary

The Alamo Area Council of Governments receives funding from the Texas Commission on Environmental Quality (TCEQ), the Texas Department of Transportation, and the State Energy Conservation Office to conduct air quality outreach in the agency's 12-county region. These outreach programs inform residents of the region's air quality status; notify the media, medical personnel, and schools when ozone pollution is forecast to reach unhealthy concentrations; educate students and citizens on the causes of ozone pollution; and encourage employers and individuals to adopt clean air measures.

The outreach messages are provided to the public through advertising campaigns, presentations, events, and materials. Because San Antonio's Hispanic community makes up 61% of the population, emphasis is placed on ensuring advertisements, materials, and web pages display bilingual air quality messages.

AACOG staff often teams with partners from TCEQ's Region 13 and local elected officials to conduct outreach with specific industries and businesses. During the 2006-2007 biennium, these efforts included meetings with cement kiln operators, workshops for fleet operators regarding proper equipment maintenance, seminars on natural gas fuels and vehicles, and public meetings with taxi companies to address hybrid-electric fleets.

AACOG focuses on air quality strategies and programs that provide measurable results, particularly quantifiable emission reductions. Since January 2006 staff has conducted several events and programs in which participants provide the agency with vehicle miles traveled data, fuel usage, and/or other data useful in evaluating the success of campaigns in terms of emission reductions. These include such events as the Walk & Roll Challenge and Corporate Challenge in which participants are encouraged to use alternatives to driving single-occupant vehicles and programs such as the Alamo Clean Air Partnership that encourages employers to adopt strategies to conserve energy, lower emission from paints and solvents, and properly maintain vehicles. The data provided to AACOG allowed staff to estimate that the reductions in ozone precursor emissions from these strategies exceed 2,300 tons annually.

*Chapter 1***Background****1.1 Purpose of air quality marketing and education in the AACOG region**

The San Antonio area continues to struggle with the regional goal of meeting National Ambient Air Quality Standards (NAAQS) for ground-level ozone pollution. Despite state and national regulations that lower emissions from vehicles, fuels, and equipment, as well as voluntary emission reduction strategies adopted by local leaders in 2002<sup>2</sup>, regional ozone pollution levels typically reach unhealthy concentrations several times each summer. Furthermore, the fourth highest eight-hour average ozone value – the value used to determine a region's adherence to national clean air standards – has exceeded federal standards each year in the San Antonio area since 2002.

Compounding the concern over high ozone values in past years is the U.S. Environmental Protection Agency's announcement regarding new standards that will likely reduce the threshold of acceptable ambient ozone concentrations. As required by the Clean Air Act, the Agency must review and revise the NAAQS as appropriate every five years. On June 21, 2007, the US Environmental Protection Agency (EPA) released a proposed rule suggesting revisions to the current 8-hour average ozone NAAQS within the range of 0.070 to 0.075 parts per million (ppm).

Regardless of whether the San Antonio region meets the federal standard as of the end of 2007, the region will continue to face difficulties in meeting the NAAQS for ozone, particularly a more strict standard that lowers the threshold of acceptable ambient concentrations.

Of most concern to local officials, however, are the health implications of air pollution concentrations that exceed national standards. According to the EPA, short-term exposure to ozone causes reduction in lung function and such respiratory symptoms as coughing, pain with deep inhalation, and shortness of breath. The pollutant is particularly harmful to certain groups; the most acutely responsive of which are people

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<sup>2</sup> In 2002, elected officials from Bexar, Comal, Guadalupe, and Wilson Counties, which constituted the San Antonio Metropolitan Statistical Area at that time, asked the State to adopt rules in the four county region that reduce emissions from degreasing activities and the process of refilling gasoline storage tanks.

with asthma. Exposure to ozone has been linked to increased frequency of asthma attacks and need for health care. The American Lung Association (2007) estimates that, in Bexar County alone, there are 37,692 children and 74,270 adults with asthma.

### 1.2 Basis of air quality marketing and educational programs conducted by AACOG

Technical work conducted by AACOG staff goes hand-in-hand with air quality outreach and education. Air quality monitoring and analyses are most beneficial when the knowledge gained by the studies is provided to those who have the ability to and interest in making the changes necessary to improve local air quality: municipal and other government agencies, businesses, industries, schools, and the public. Likewise, outreach and education that are not founded in technical analyses are subject to scrutiny and criticism.

Emission inventories developed by staff indicate that on-road vehicles release more ozone-forming emissions into the air than any other local source category. On the basis of this technical work, much of the outreach efforts conducted by staff focuses on measures to reduce mobile source emissions. These efforts include advertising campaigns to reduce vehicle miles traveled (VMT), promote vehicle maintenance, and improve vehicle operation (e.g., discourage aggressive driving, engine idling, and excessively high speeds).

As another example of the synergy between AACOG's technical analyses and outreach efforts, staff developed a campaign to reduce mid-day VMT based on photochemical modeling performed for the region. Past computer modeling work indicated that less mid-day driving more effectively reduces ambient ozone levels than limiting driving at other times of the day. While the model parameters were set for climatic and atmospheric conditions from an historic high-ozone episode that do not necessarily mirror typical weather patterns, the results still demonstrated the important role mid-day VMT may have on ambient ozone concentrations. Consequently, AACOG began a campaign through the Commute Solutions program to encourage drivers to use alternative forms of commuting – walking, carpooling, cycling, riding the bus, and eating at the office – in lieu of taking one-person vehicle trips during the lunch hour.

US EPA ARCHIVE DOCUMENT

Outreach and educational activities also address other sources of ozone precursors; however, the methods employed to distribute outreach messages vary by source category. For example, outreach staff addressed emissions from point sources such as regional cement kilns on a per company basis during meetings among stakeholders – industry representatives, municipal governments, and Texas Commission on Environmental Quality (TCEQ) Region 13 staff. Outreach to owners and operators of off-road equipment and heavy-duty vehicles typically consist of seminars, meetings, or training sessions designed for a group of similar industries, i.e., school bus fleet managers, refuse haulers, and forklift operators.

### 1.3 Support for Air Quality Outreach/Education

AACOG's air quality outreach and educational activities in the AACOG region are supported through funding provided by several state agencies including the TCEQ, the Texas Department of Transportation (TxDOT), and the State Energy Conservation Office (SECO). In addition, AACOG maximizes funding and staffing resources by partnering with a number of other organizations to distribute air quality educational messages to as large an audience in the AACOG region as possible. AACOG's partners include the City of San Antonio, Bexar County, CPS Energy, VIA Metropolitan Transit, the San Antonio Manufacturer's Association, TCEQ Region 13, the San Antonio-Bexar County Metropolitan Planning Organization, Drive Clean Across Texas, the South Texas Asthma Coalition, the Greater San Antonio Chamber of Commerce, TxDOT-San Antonio District, the San Antonio Metropolitan Health District, and the numerous government agencies, businesses, and organizations represented by the Air Improvement Resources Committees – the local air quality planning coalition.

### 1.4 Goals of Air Quality Outreach and Education

AACOG adopted the following three broad outreach goals for the 2006-2007 reporting period:

- Increase recognition of air quality messages in the AACOG region, i.e., increase the number of air quality messages distributed and venues
- Increase community awareness of air quality issues
- Increase participation in air quality programs and emission reduction strategies

The outreach program addresses these goals using various tools and with the support and assistance of a number of organizations. Table 1 provides examples of the methods, partners, and evaluation processes used to market air quality in the AACOG region. Greater detail on specific campaigns and outreach programs are provided in subsequent sections of this report.

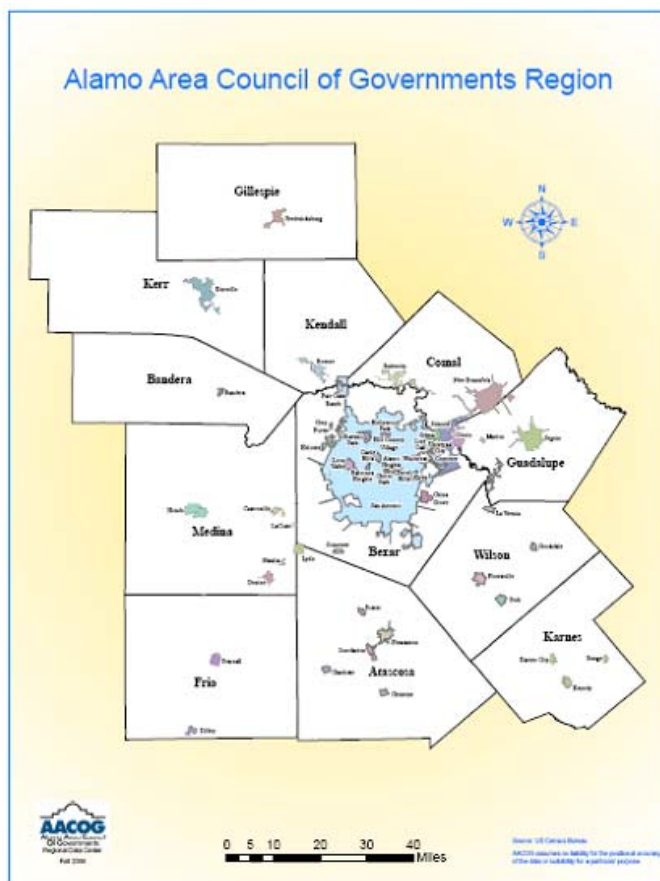
Table 1. Examples of Methods Used to Conduct Outreach and Educational Activities and Evaluate Progress

Goal	Methods	Partners	Measures of Success
Increase recognition of air quality messages and diversity of venues	Advertisements Press Items Interviews Distribution of flyers, brochures, and other materials Billboards	TxDOT Drive Clean Across Texas CPS Energy Metropolitan Planning Organization	Surveys Quantity of air quality related media articles / broadcasts Visitors to website Inquiries (phone, e-mail) Participation at events
Increase community awareness of air quality issues	Air Quality Health Alert Program K-12 School Curriculum Health Fairs Seminars	TxDOT South Texas Asthma Coalition School Districts	Materials distributed Requests for information Surveys Materials displayed (e.g., use of the Clean Air Gauge among media and other outside agencies)
Increase participation in programs and emission reduction strategies	Correspondence with businesses and agencies in the AACOG region Presentations to HR staff, fleet managers, and other company/agency personnel Seminars on alternative fuels, energy conservation, and other emission reduction strategies	Chambers of Commerce San Antonio Manufacturer's Association Texas Independent Automotive Association TCEQ Region 13 SECO	AQHA notification list ACAP emission reduction datasheets Participation in Walk & Roll Challenge events (quantifiable VMT reductions) RideShare membership Alternative fuel use

### 1.5 Audience Demographics

The Alamo Area Council of Governments consists of a 12-county region: Bexar County, which contains the San Antonio City limits, and 11 surrounding counties as pictured in Figure 1. According to the U.S. Census (2005),<sup>3</sup> San Antonio overtook Dallas in terms of population and now holds the distinction as the second largest city in Texas.

Figure 1. Map of the AACOG region. Source: *Alamo Area Council of Governments, 2007.*



Several demographic attributes distinguish San Antonio from other large Texas cities. When compared to Austin, Dallas, and Houston – other major metropolitan areas located in the eastern half of the State – San Antonio has the largest Hispanic population. As 61% of the total population, San Antonio's Hispanic community makes up a significantly higher percentage of the total than the next highest, the City of Houston at 42.3% (Table 2).

San Antonio fairs very well when comparing the population of adults who have graduated from high

school with statistics in other Texas regions; however, the proportion of graduates drops considerably when addressing adults that hold bachelor's or higher degrees. In fact, the percentage of college graduates is lower in San Antonio than Austin, Dallas, and Houston.

Census statistics indicate the majority of San Antonio drivers commute to work alone. Seventy-nine percent of San Antonio's workforce report they drive to work in single-occupant vehicles compared to 75% in Austin and 74% in both Dallas and Houston.

<sup>3</sup> Statistics obtained from U.S. Census Bureau's 2005 American Community Survey.



Likewise, San Antonio commuters were the least likely to take public transportation. A mere 3% of the workforce uses mass transit for work-related commutes. The percentages, however, were only slightly higher in other Texas regions: Dallas 4%, Austin and Houston 5%.

Table 2. Comparisons between San Antonio, Austin, Dallas, and Houston for Selected 2005 Demographic Data. Source: *U.S. Census Bureau 2005 American Community Survey*.

<b>2005 Demographic Data</b>	<b>San Antonio</b>	<b>Austin</b>	<b>Dallas</b>	<b>Houston</b>
Total Population	1,202,223	678,457	1,144,946	1,941,430
One race				
• White	64.0%	69.2%	56.9%	56.7%
• Black or African Amer.	6.1%	8.9%	23.7%	23.5%
• Am Indian and AK Native	0.7%	0.5%	0.5%	0.3%
• Asian	1.8%	5.2%	2.8%	5.8%
• Hawaiian/Pacific	0.1%	0.1%	0.0%	0.1%
• Some other race	24.1%	14.3%	15.0%	12.5%
Hispanic or Latino (of any race)	61.2%	32.9%	42.1%	42.3%
Speak a language other than English at home	44.8%	33.2%	43.9%	46.9%
Age Distribution				
• < 18	28%	24%	27%	28%
• 18 – 24	11%	13%	10%	10%
• 25 – 44	30%	36%	34%	31%
• 45 – 64	21%	21%	21%	22%
• > 65	10%	7%	9%	8%
Hold a bachelor's degree or higher	23.4%	44.1%	28.3%	27.8%
Drive to work alone	79%	75%	74%	74%
Carpool	12%	11%	15%	14%
Take public transportation	3%	5%	4%	5%

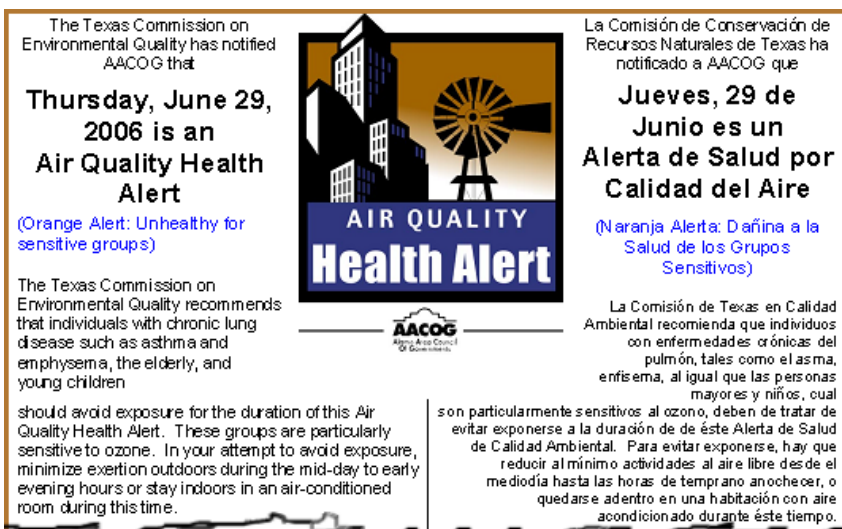
Demographic characteristics play an important role in developing air quality messages and marketing emission reduction strategies within the AACOG region. For example, the high percentage of San Antonio's working population that commutes in one-person vehicles prompted AACOG staff to focus marketing efforts on the largest employers in the region and encourage development of corporate carpool programs. In 2007, AACOG partnered with agencies in the Austin region to purchase automated carpool services that provide real-time information on potential carpool partners throughout the joint Austin-San Antonio regions. The web-based software provides AACOG and its

partners with the ability to track carpooling activities and calculate the effectiveness of the program in terms of reduced VMT and emissions.

AACOG outreach staff works closely with VIA Metropolitan Transit to encourage use of their public bus system as well as the transit company's new vanpool program. The two organizations jointly promote the Certified Auto Ride Home in an Emergency (CARE) program and related projects to encourage carpooling, vanpooling, and riding the bus.

With the high percentage of Spanish-speaking residents in the AACOG region, bilingual brochures, web pages, and advertisements support outreach efforts. Air Quality Health Alert notices distributed to media, schools, and businesses throughout the region when ground-level ozone is expected to reach unhealthy levels, feature English (left column) and Spanish (right column) messages (Figure 2). In addition, the Natural Resources department employs bilingual staff that can respond to inquiries from Spanish-speaking residents.

Figure 2. Bilingual Air Quality Health Alert notices are distributed to media, schools, and businesses in the AACOG region.



"Improving the quality and availability of environmental and public health information (in English and Spanish) in a manner that is relevant to the Hispanic community is an important first step in enlisting Hispanic support." *EPA Region 6 Beyond Translation Initiative.*

AACOG staff participated in the first *Beyond Translation Forum*, a two-day event conducted by EPA's Region 6 Water Program in October 2006. As its primary purpose, the event addressed environmental challenges and opportunities in the region and measures to engage the Hispanic community in environmental issues by making

information relevant and establishing communication networks. Insight gained at the *Beyond Translation Forum* has been applied to local marketing efforts.

AACOG actively seeks means of engaging the Hispanic audience in air quality issues. In addition to bilingual air quality educational materials and web pages, staff participates in regional events that support the Latino community. A prime example is the annual *Festival Hispano de la Salud* conducted in San Antonio's Alamodome. This health-related event has been a successful venue for distributing Spanish-language air quality materials to the community.

#### 1.6 Summary

As a *nonattainment deferred* region, progress is necessary to avoid a full non-attainment designation and the possible economic consequences of a NAAQS violation. More importantly, improving air quality is necessary to ensure a healthy environment for the more than 2 million residents living in the AACOG region. With support from the Texas Commission on Environmental Quality, the Texas Department of Transportation, the State Energy Conservation Office and many local entities, AACOG's outreach and educational programs have succeeded in distributing air quality messages to a large and diverse audience. The programs' successes between January 2006 and August 2007 have been documented and are presented in the following chapters.

## Chapter 2 Air Quality Programs & Campaigns

Air quality outreach and education are conducted through a number of AACOG programs, some of which address specific audiences such as fleet operators, students, educators, and business leaders. Other programs, such as Commute Solutions, address all groups, regardless of age or business affiliation. Combined, these programs cover the 12-county AACOG region in terms of reach and audience categories. The remainder of this chapter describes the goals, funding sources, and progress made in each of the air quality outreach and educational programs conducted by AACOG between January 2006 and August 2007.

### 2.1



#### 2.1.1 Description and Purpose

The Air Quality Health Alert (AQHA) program is a notification system that provides ozone pollution advisories to the San Antonio region when concentrations are forecast to reach unhealthy levels. Originally called *Ozone Action Day*, the region's air quality planning group – the Air Improvement Resources Executive Committee (AIRCo) – changed the name in 2000 to convey the intent of the program as a health-related issue.

AACOG encourages the general public to carpool, refrain from using gas-powered lawn equipment, and adopt other emission reduction measures on AQHA days. Additionally, they are advised of the health concerns associated with elevated ozone concentrations and encouraged to take appropriate precautions, particularly those who belong to ozone-sensitive groups: the young, people with respiratory illnesses, and adults who are active outdoors.

#### 2.1.2 Funding

The AQHA notification program receives its support through funding from TxDOT. These funds allow AACOG to maintain the notification system for distributing alerts; increase participation in the program by media, businesses, and other groups; develop

and produce educational and promotional materials regarding the AQHA program and the Air Quality Index; conduct presentations and lessons to schools and community groups; and monitor the progress of the program in terms of number of recipients and broadcasts by media.

The AQHA program relies on information provided by TCEQ meteorologists as part of that agency's Ozone Forecast system. When atmospheric and meteorological conditions are conducive to unhealthy ozone concentrations, TCEQ notifies AACOG staff through email and telephone messages. TCEQ's forecasts – and the subsequent AQHA notifications from AACOG – are distributed to the region the day before ground-level ozone is expected to reach unhealthy levels, regardless of whether the alert falls on a weekday or weekend.

#### 2.1.3 Program Goals

The primary goals of the AQHA program are to increase recognition of the Air Quality Health Alert label, understanding of what the alert means, and knowledge of what types of actions should be taken on AQHA days. In addition, staff continually seeks greater participation by media partners to ensure a widespread audience.

#### 2.1.4 AQHA Campaigns

##### *AQHA Banner Campaign*

AACOG offers, for the cost of printing, AQHA banners for display on alert days. In February 2006, Mr. Chip Haass, then City of San Antonio Councilman and member of the AIRCo, initiated a campaign to promote the AQHA program (Figure 3) by purchasing more than 100 banners from AACOG for use at City facilities. As part of his commitment to improving air quality in the San Antonio region and protecting the welfare of children and other citizens, Councilman Haass also initiated an Air Quality Health Alert banner campaign for schools. With funding from the City Council, this program provided banners to public and private schools in San Antonio that participated in the Air Quality Health Alert notification system. During 2006, AACOG staff distributed AQHA banners to 420 schools in San Antonio under the Councilman's program. The momentum initiated from the Councilman's efforts spanned political boundaries and a number of schools in outer counties purchased banners as well.

Figure 3. Section of AACOG's Air Quality Health Alert Toolkit providing information on obtaining banners.



#### *AQHA School Nurse Campaign*

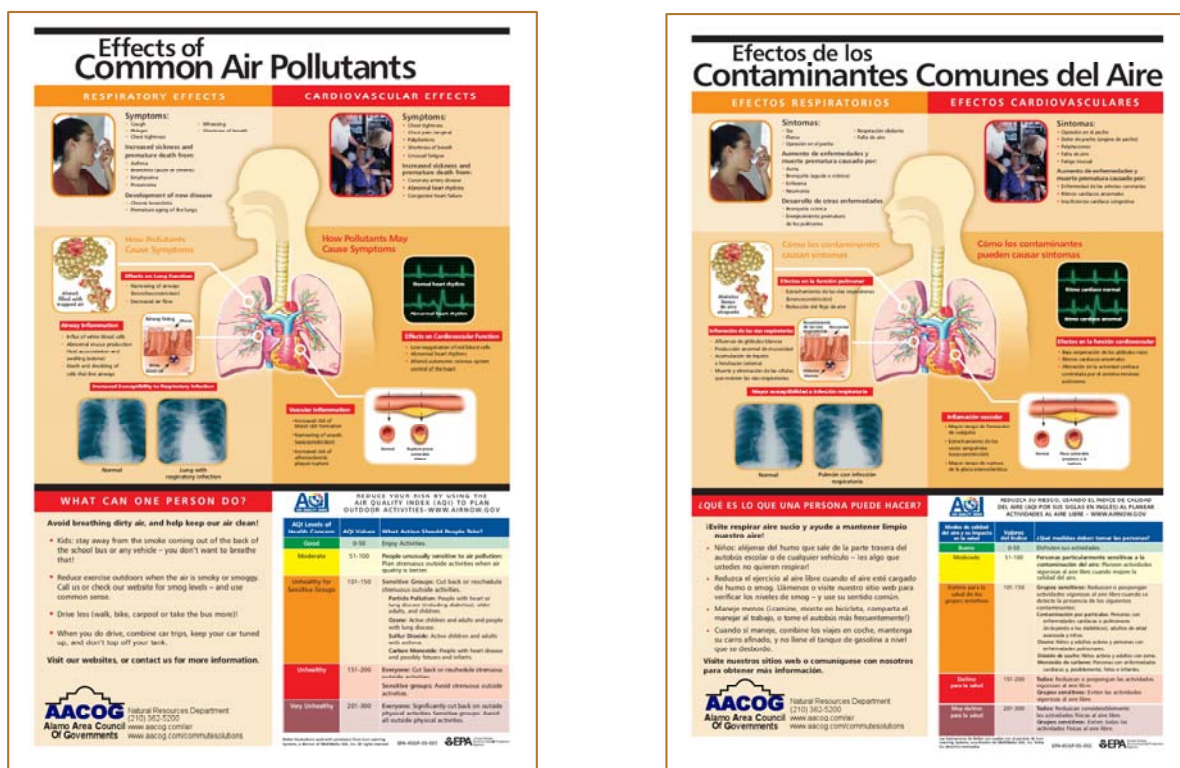
Staff developed various materials for schools to supplement the banner campaign. These included school packages containing information about ozone air pollution in the San Antonio region, descriptions of AACOG's other air quality programs, and health tips for AQHA days. Many of these materials were printed in English and Spanish. Examples include brochures explaining the AQI system, posters describing the health impacts of ozone pollution (pictured in Figure 4), and door signs announcing air quality alerts.

Several school districts provided opportunities for staff to address their medical personnel during events such as district nurse workshops. During 2006, staff participated in a number of such events including workshops at Judson ISD and North



East ISD. During 2007, AACOG staff presented the AQHA program to the following school districts: Southwest ISD, San Antonio ISD, Harlandale ISD, Archdiocese for Catholic Schools, Lackland ISD, Southside ISD, South San Antonio ISD, Judson ISD (refresher), and Comal ISD.

Figure 4. English and Spanish versions of the EPA's "Effects of Common Air Pollutants" reprinted, by permission, with AACOG's contact information.



In February 2007, AACOG hosted a school nurse workshop in conjunction with the South Texas Asthma Coalition. Nine school districts participated in the workshop, which had as a goal, the development of an Asthma Action Plan (AAP) template that could be used by all schools in the region. The AAP is completed by an asthmatic student's physician and includes a section noting preferred activity levels on Air Quality Health Alert days. Fifteen thousand copies of the AAP were printed in July and distributed to 10 school districts in the region. Some districts, such as NEISD, assisted with the project by printing a portion of needed forms on their own. One thousand Spanish language AAPs were printed and distributed to the school districts as well.



The important link between ozone and pediatric asthma has been embraced by the school districts in the AACOG Region. The Asthma Coalition of Texas (ACT) is considering adopting AACOG's air quality programs (e.g. AQHA banner program and Green Patrol program described later) and supplemental materials as a prototype for the State of Texas. ACT's Executive Director requested AACOG staff be prepared to discuss the Green Patrol anti-idling program at the 2007 ACT Annual Meeting.

#### *Automated AQHA Notification System*

Another campaign initiated by the City of San Antonio was an automated version of the AQHA notification system. In early 2006, the City partnered with SCAN USA and AT&T for broadcasting emergency messages, such as Amber Alerts, health alerts, and environmental alerts, to the public. The service was also made available to AACOG for distributing AQHA notifications. The SCAN USA system had several advantages over AACOG's previous distribution method, the most important of which was the greater variety of methods in which participants could receive alerts including email, fax, and text messaging to cell phones.

The City of San Antonio, AACOG, and VIA Metropolitan Transit conducted a press conference in March 2006 to launch the new AQHA broadcast system. The automated AQHA notices were promoted through other methods as well. VIA displayed AQHA placards inside transit buses (Figure 6), outreach staff promoted the program at events and presentations, and the City displayed program posters in city facilities.

Figure 5. Bus placards encouraged passengers to sign up for AQHA notifications.



The primary drawback to the SCAN USA program was the lack of data on notification recipients. Each organization or individual wishing to receive AQHAs was required to register directly with SCAN USA. Because of this limitation, AACOG could no longer evaluate the progress of the AQHA program in terms of number of participants. In addition, the SCAN USA system did not have a feedback mechanism to ensure AQHA

notices were received by the intended users. Consequently, AACOG staff followed up with media and other organizations by phone to verify receipt.

Currently, staff is working with AACOG's Information Technology (IT) department to set up an in-house notification system that can be accessed from anywhere – inside or outside the agency. Research into available systems failed to identify a notification system that met all criteria required by staff; hence, AQHAs are distributed from agency fax, computer, and telephone equipment pending a more flexible system being developed internally.

### *Clean Air Gauge*

During the December 2006 meeting of the Air Improvement Resources (AIR) Committee, members asked staff to develop a visual tool to help the public understand that regional air pollution levels must remain below federal standards to meet attainment

Figure 6. The Clean Air Gauge indicates the point at which the San Antonio region exceeds federal air quality standards for ozone. For the 2005-2007 3-year averaging period, the fourth highest 8-hour average for ozone must remain below 82 parts per billion in 2007 to remain in attainment

thresholds and maintain a healthy environment. With the help of the AIR Public Education Committee, staff developed the Clean Air Gauge (Figure 6).



Outreach staff requested that organizations in the AACOG region display the Clean Air Gauge on their own web sites to increase visibility of the graphic. Staff updates the Clean Air Gauge on AACOG's web pages on a weekly basis. By linking their graphics to AACOG's Clean Air Gauge, all organizations display the same, updated information.

As of August 2007, the following organizations are displaying the Clean Air Gauge on their web sites:

- San Antonio Water System: <http://www.saws.org/environmental/cleanair/>
- San Antonio-Bexar County Metropolitan Planning Organization:  
[http://www.sametroplan.org/pages/Air\\_Quality/MPOOzone.html](http://www.sametroplan.org/pages/Air_Quality/MPOOzone.html)
- TransGuide: <http://www.transguide.dot.state.tx.us>
- City of San Antonio: <http://www.sanantonio.gov/enviro/EMD/AirQuality.asp>
- Palo Alto College  
<http://www.accd.edu/pac/html/Community/publicaffairs/walkandroll/>
- Drive Clean Across Texas:  
[http://www.drivecleanacrosstexas.org/other\\_aq\\_programs/partner\\_programs/san\\_antonio.stm](http://www.drivecleanacrosstexas.org/other_aq_programs/partner_programs/san_antonio.stm)
- VIA Metropolitan Transit: <http://www.viainfo.net/Community/Green.aspx>
- Bexar County: <http://www.bexar.org/>
- City of Boerne: <http://www.ci.boerne.tx.us/>
- Comal County Engineers: <http://www.cceo.org>
- Alamo Regional Mobility Authority: <http://www.alamorma.org>
- Comal County: <http://www.co.comal.tx.us/AirQuality.htm>
- AACOG: <http://www.aacog.com/>  
AACOG/AIR <http://www.aacog.com/air/default.asp>  
CleanAirDrive [www.cleanairdrive.com](http://www.cleanairdrive.com)

#### 2.1.5 Promotion

The AQHA program is promoted through the media, on the agency's and partners' web sites, and the banner campaign. Staff works with the media on an individual basis to ensure local newspapers, radio and television stations are aware of the program and have high-resolution copies of the AQHA logo. Similarly, schools and school districts are contacted directly and offered AQHA banners and other air quality education tools.

#### 2.1.6 Progress

As of August 2007, AACOG's Air Quality Health Alert notification list numbers 1,145 recipients including the following:

- 7 television stations

- 17 radio stations
- 8 newspapers
- 45 local governments
- 444 schools
  - 42 public school districts
  - 2 colleges
  - 3 private schools
- 8 health care facilities

One of the most visible means of displaying AQHA messages – according to surveys conducted by AACOG – has been the digital highway sign. For several years, TxDOT's San Antonio District has posted Air Quality Health Alert messages on their electronic TransGuide signs, such as that pictured in Figure 7, during alerts to keep commuters informed and encourage clean air habits, such as carpooling or refueling in the evening.

Figure 7. TxDOT rotates air quality messages with traffic advisories on TransGuide signs during AQHA days.



## 2.2

### Air Quality Education

#### 2.2.1 Program Description and Purpose

Air quality education is one of the most important outreach activities conducted by staff. It is an ongoing effort that takes a variety of forms from technical information provided to elected officials at Air Improvement Resources Committee meetings, city council meetings, and commissioners' courts to school classrooms. The air quality educational program provides information to all age groups regarding causes of air pollution, dispersion of pollutants, health impacts, and measures to improve air quality.

The purpose of the student education program is to instill a sense of responsibility for their actions –

including driving and other emission-generating activities – in younger audiences so they will understand the environmental consequences of unrestrained or unmitigated use of fuels and chemicals. Oftentimes students share these lessons with parents and other family members, increasing substantially the number of people that receive the air quality messages.

Figure 8. Exhibit at WeatherQuest in January 2007 demonstrating the relationship between ozone formation, transport, and deposition; atmospheric emissions; and meteorological conditions.



Educational services are also provided at the business and industry level. For example, staff works with businesses and industries to identify best practices for reducing pollution and measures to improve air quality through specific strategies applicable to each business category. Such educational efforts include workshops for fleet operators on proper vehicle maintenance, conferences on alternative fuel use for operators of heavy equipment, and seminars on energy conservation for building managers. These efforts are described in more detail under the Clean Cities and Alamo Clean Air Partnership sections of this report.

During the 2006-2007 biennium, educational opportunities also included exhibits at meteorological conferences, university events, trade association meetings, and student-related meetings and events.

### 2.2.2 Funding

Funding for air quality education is provided through several grant programs.

Educational programs for students are funded through a grant from TxDOT. This grant allowed staff to organize an educational curricula package for kindergarten through 12<sup>th</sup> grades. A grant from SECO provided opportunities for AACOG to conduct mechanic-



taught vehicle maintenance workshops. In addition, funding from TCEQ allowed staff to develop a series of seminars as part of the Alamo Clean Air Partnership to inform businesses of measures to reduce pollution, and at the same time, cut fuel and other operational costs.

### 2.2.3 Program Goals

The goals of the air quality education program are to increase understanding of the causes of air pollution and measures to reduce precursor emissions. Staff conducts surveys twice a year to determine whether the public understands the causes of pollution and other critical air quality issues.

### 2.2.4 Campaigns

#### *K-12 Air Quality and Transportation Educational Curriculum*

An Air Quality and Transportation curriculum was organized from materials developed by the Alliance to Save Energy, Department of Earth Science at the University of Iowa, Energy Information Administration, U.S. Environmental Protection Agency, Northwestern Indiana Regional Planning Commission, Texas Commission on Environmental Quality, Texas State Energy Conservation Office, and West Michigan Clean Air Coalition. The curriculum includes lessons and activities for kindergarten through 12<sup>th</sup> grade and covers such topics as 1) what air and air pollution are, 2) how transportation affects air quality, and 3) the role of meteorology in forecasting air pollution. Staff plans to update the three-year old program with current data and have the curriculum reviewed by professionals for adherence to Texas Essential Knowledge and Skills. The revised curriculum will be available in 2008. The current K-12 educational package is available on AACOG's web site. Teachers may also contact staff for hard copies of the curriculum.

#### *Air Action Team Activity Kits*

During the summer of 2007, AACOG began offering kid's Air Action Team activity kits that contain educational materials from multiple educational/training organizations. The kits are promoted as materials to keep kids occupied while traveling during the summer and as a fun, after school activity during the rest of the year.

### *Environmental CSI*

A series of lesson plans for middle school students that focuses on solving the *Dirty Air Crimes* is under development by staff. The lessons guide students through various investigations regarding a list of suspects (based on the *Dirty Dozen* gang developed by the New York Department of Environmental Quality), dirty air evidence, and crime stopping measures. Like the Air Quality Curriculum, Environmental CSI lessons are based on training developed by instructional organizations. Environmental CSI will debut in 2008.



#### 2.2.5 Progress

AACOG has distributed 130 curriculum projects to area educators. In addition to the hard copies of all activities and lessons, each curriculum project includes a CD of all activities and lessons. Additionally, each project includes resource material, such as the Air Pollution Gremlins poster, to assist educators.

## 2.3



### **Commute Solutions**

#### 2.3.1 Description and Purpose

Commute solutions consists of a variety of sub-programs and components encouraging trip reduction and anti-idling practices. The program seeks to improve air quality and reduce traffic congestion by promoting the widespread use of transportation alternatives.

#### **2.3.2 Funding**

Commute Solutions programs are funded by the Texas Department of Transportation through the San Antonio-Bexar County Metropolitan Planning Organization.

### **2.3.3 Goals**

The mission of Commute Solutions is to identify trip alternatives, such as carpooling, cycling, vanpooling, public transportation, compressed workweek, flex time and telecommuting, and promote these alternatives to the public. Outreach materials and presentations focus on educating residents regarding the benefits of alternative commuting practices.

#### *River Cities Rideshare*

Commute Solutions launched free rideshare matching services in 2000. Since the founding of the program, the number of registrants greatly increased justifying the need for a more efficient system. In 2006, AACOG staff began researching potential automated rideshare matching systems to decrease turnaround time, provide reportable emission reduction data, and increase user interaction in the program.

In spring 2007, AACOG partnered with the Capital Area Metropolitan Planning Organization (CAMPO) and VIA to develop RiverCitiesRideshare.com, an online, real-time, and user-driven rideshare matching system. The partnership purchased the web-based matching service from Ecology and Environment, Inc., whose *GreenRide* software is used by a number of municipalities throughout the country. Through this partnership between various central Texas organizations, River Cities Rideshare serves 22 counties, which greatly benefits commuters traveling the I-35 corridor between Austin and San Antonio.

The River Cities Rideshare system consists of various components to handle discrete Commute Solutions matching programs, including the public pool, SchoolPool, employer pool, and bike buddies. These modules match participants based on preferred destinations or modes of travel. The Walking School Bus program is the only service not included on the River Cities Rideshare website because of its need for special attention in assigning chaperones to walking groups, a task not well suited for an automated system.

Two of the requested features provide important levels of service unavailable in the previous system: the user-driven modules and the report generation features. River



Cities Rideshare registrants determine their preferred matching parameters including: gender, smoking, and departure times. Registrants can also select the matching radius, activate an email alert notification, and record the days they carpool, bike, vanpool, or ride the bus on a commuter calendar. This rideshare tracking system offers more accurate emission reduction estimates. Total numbers of new registrants, registrants by zip code, total vehicle miles avoided, and emission reductions can be calculated and exported from the system database.

#### *Certified Auto Ride in an Emergency (CARE)*

A common reason commuters object to participating in carpools or using the bus system is because of concerns over how they will get home in the event of an emergency, such as a sick child or an unexpected late evening in the office. The CARE program provides a solution to this ridesharing dilemma. For an annual fee of \$5, participants will receive four taxi vouchers that can be used in emergencies. Registrants qualify if they carpool, vanpool, or ride the bus at least three days a week.

The number of participants greatly increased in the CARE program 2006, following a fee reduction from \$15 to \$5 and greater promotion by VIA and AACOG. This past year alone participants rose by more than six fold compared to 2000-2005 total number of registrants.

#### *Walk & Roll Events*

The Commute Solutions program promotes clean air practices by offering incentives and also desires to measure these behavior changes in a quantifiable manner. The Walk and Roll Corporate and Public Challenges serve both purposes. Participants log their *smart miles*, which include cycling, walking, busing, vanpooling and carpooling miles, and are rewarded with incentives, donated by local organizations, such as raffles, coupons, and prizes. Miles are recorded through a user-driven, online system.

The first Public Challenge took place in 2005. In 2006, AACOG coordinated two Challenges, a corporate competition in June and a public competition in October. The 2006 public Challenge totaled 58,499 smart miles logged and close to 200 pounds of emissions reduced. The 2006 and 2007 Corporate Challenges are described in section 2.4 regarding the Alamo Clean Air Partnership.

### *Fresh Air Friday*

Each year, outreach staff coordinates an event to kick off Ozone Season. This kickoff event educates the public on air quality issues with a goal to motivate citizens to adopt simple clean air practices. In 2007, AACOG coordinated *Fresh Air Friday*. Being located downtown during a business day, Fresh Air Friday targeted a professional commuter audience. Outreach



staff developed the *10 Simple Things You Can Do to Clean the Air* campaign in 2007. Fresh Air Friday supported the *simple things* campaign by offering downtown employees an opportunity to walk to the event for lunch, entertainment, and education. The event also served as a platform to announce the 2007 Walk & Roll Corporate Challenge Winner.

### *Ozone Season Outreach Events*

Mobile source emissions are the primary local contributor of air pollution in the AACOG region. Outreach staff strives to help the region understand that, collectively, small steps can make a difference in air quality.

Attending outreach events and distributing air quality materials greatly helps in educating the public and encouraging clean air practices. Events include: health fairs, rallies, festivals, and community workshops to speak one-on-one with citizens and distribute air quality materials, promotional items, and program information.

Annually, springtime brings large-scale events, such as Fresh Air Friday, Earth Day, and LiveGreenFest. These spring events all help kick off ozone season. End of summer health and back-to-school fairs provide an opportunity to remind

citizens that the region is in its second ozone season peak.<sup>4</sup> Outreach staff continuously searches for new opportunities, especially partnering opportunities and events located in the Early Action Compact Counties: Bexar, Comal, Guadalupe, and Wilson County. In 2006, staff attended a Stuff the Bus event in Seguin. In June 2007, staff partnered with Time Warner Cable at their *Movie in the Park* event at San Pedro Park, which proved to be a success by attracting over 1,000 attendees. AACOG will again partner with Time Warner Cable for an event in September 2007 (Figure 9).

Figure 9. Examples of air quality promotional materials developed by staff for Time-Warner Cable's family-oriented *Movie in the Park* series. The first event was held on June 9 and featured the movie *Shrek*. The second event will be held on September 8, 2007 and feature *The Wizard of Oz*.



#### *Presentations to civic groups and businesses*

Building strong partnerships with businesses and community organizations plays a vital role in disseminating information, often through presentations, on air quality and program services. These presentations provide an opportunity to demonstrate how outreach programs operate and discuss emissions reduction practices in greater detail.

<sup>4</sup> The strong correlation between ozone concentrations and meteorological and atmospheric conditions creates a fairly predictable pattern of ozone peaks and valleys each year. Historically, the San Antonio area experiences two annual time periods when eight-hour average ozone measurements peak: late June and late August through September.

AACOG seeks participation by businesses and organizations in employer-based programs, such as the Alamo Clean Air Partnership, CARE, and River Cities Rideshare. By visiting various organizations to recruit program participants, deliver presentations, or exhibit at fairs, the outreach program reaches a number of employees each year. Organizations include: San Antonio Road Runners and Volkssport Clubs, Rotary and Interact Clubs, San Antonio Water System, Standard Aero Corporation, Northwest Vista College, Harcourt Inc., and Boeing.

### *Advertising Campaign*

Campaign messages and clean air themes are reviewed and developed prior to the start of the ozone season. The theme carries through paid advertising slogans, commercials, and promotional items with the purpose of emphasizing the uniform, clean air messages.

In 2006, the outreach program developed the theme *Clean Air Drive* and slogan *Cleaning Our Future, On Mile at a Time* to focus on the significant contribution of mobile sources to the region's emissions inventory. AACOG created the CleanAirDrive.com website to display campaign messages. This branding name provided a more tangible message for the public – making the campaign easier to understand and remember. In 2007, to strengthen the health aspect of air quality, staff developed the slogan *A Breath of Fresh Air* to complement the Clean Air Drive brand.



The Clean Air Drive/Breath of Fresh Air campaign and slogan have been printed on many Commute Solutions outreach items (e.g. bags, key chains, pens, etc.). Improved

branding has been successful over the past year measured by a large increase in the number of visitors to the CleanAirDrive.com website.

### 2.3.5 Promotion

AACOG promotes the Commute Solutions program through various channels: media, events, and presentations. Annually, outreach staff work with local advertising representatives to purchase TV, Radio, and Print advertising to promote the Commute Solutions program. All advertising tags direct the audience to CleanAirDrive.com.

Staff attends a number of outreach events and presentations throughout the year. Events provide the opportunity for staff to speak one-on-one with attendees, while presentations provide the opportunity to speak to large groups of people at one time. In both cases, all appropriate programs are promoted. Table 3 displays a summary of outreach efforts for 2006 and 2007.

Table 3. 2006-2007 Outreach Summary

<b>Outreach Effort</b>	<b>2006</b>	<b>2007</b>	<b>Total</b>
Television Interview	4	4	8
Radio Interview	10	7	17
Printed Article	7	15	22
Presentations (Govt., Civic, Private)	12	16	28
School Events and Presentations	28	33	61
Public Events	52	26	78
Press Items Issued	15	25	40

### 2.3.6 Progress

Commute Solutions programs have significantly progressed in 2006 and 2007, primarily through partnerships with outside agencies. In January 2006, AACOG partnered with VIA Metropolitan Transit to revitalize the CARE program. AACOG combined efforts with CPS Energy in April 2006 to conduct LiveGreenFest *Clean Air Drive*. In June 2006, AACOG collaborated with the City of San Antonio and the San Antonio-Bexar County MPO to coordinate the Walk & Roll Corporate Challenge. Most recently, AACOG partnered with Austin agencies to develop the River Cities Rideshare program.

These partnerships have provided increased resources and improved audience reach for program promotion.



## 2.4

### Alamo Clean Air Partnership

#### 2.4.1 Purpose and Description

AACOG launched the Alamo Clean Air Partnership (ACAP) program in 2005 to enlist support for clean air measures from the business community. The cornerstone of the ACAP program is a Microsoft Excel spreadsheet that quantifies the emissions reductions associated with a wide range of strategies that are in place or under consideration by local businesses, industries, government agencies, and organizations. Businesses that participate in the program can either provide the completed database to AACOG or provide staff with the data necessary for AACOG personnel to develop a database on their behalf. The completed spreadsheets provide a baseline or summary of the organization's current emissions inventory and the emissions reductions associated with their proposed or implemented strategies.

#### 2.4.2 Funding

ACAP is the only air quality outreach/education program conducted by AACOG that is solely funded through the Rider grant administered by the Texas Commission on Environmental Quality. Contract restrictions on purchases under the Rider program limit the types of marketing conducted under the contract. Therefore, funding for ACAP is restricted to personnel time and materials developed and printed in-house. Appendix A provides examples of the ACAP materials developed during the 2006-2007 biennium.

#### 2.4.3 Program Goals

The goals of the ACAP program are to engage regional businesses and industries in measures to improve air quality. These measures include encouraging employees to participate in emission reduction activities, such as carpooling and conserving energy, as well as implementing policies to reduce the emissions associated with conducting business. Current ACAP partners have implemented such policies as: restricted landscaping activities on Air Quality Health Alert days, refueling fleet vehicles after 6 p.m., using alternative fuels and vehicles, instituting restrictions on heavy-duty vehicle engine idling, and using low VOC paints and solvents.

#### 2.4.4 Campaigns

##### *2006 Greening Your Business Campaign*

During 2006, staff created the *Greening Your Business* campaign to market ACAP. *Greening Your Business* promoted measures that reduce air pollution emissions as well as save money, such as energy conservation and strategies that decrease the consumption of gasoline and diesel fuels. A kickoff event was conducted on February 1, 2006 at the Greater San Antonio Chamber of Commerce. Over 100 of the largest employers in the region were invited to attend (see Figure 10) the half-day seminar and hear representatives from H-E-B Grocery Company and other organizations speak about successful measures implemented within their companies to decrease emissions and reduce costs.

Figure 10. Save the Date Card Promoting the *Greening Your Business* seminar held at the Greater San Antonio Chamber of Commerce on February 1, 2006.



The Greening Your Business Seminar was followed by three workshops conducted later in the year that focused on measures to reduce emissions and business expenses, particularly from the operation of fleet vehicles. The workshops were conducted in conjunction with AACOG's Clean Cities program. A master mechanic with the Texas Railroad Commission conducted the workshops – through a grant from SECO – that were attended by large fleet operators.



### *2007 Take Out Air Pollution Campaign*

A new campaign was introduced in 2007 that shifted the marketing focus from primarily business practice reduction strategies to include measures that employees may adopt to help reduce air pollution. Employers were encouraged to promote the campaign among their staff by selecting appropriate measures among a variety of programs listed on the ACAP *TakeOut* menu. See appendix A for a copy of the *TakeOut* menus and other promotional materials.



The focus of the 2007 ACAP campaign was shifted to include employees for several reasons. Gaining support of employees for adopting clean air

measures is typically a low-cost endeavor for businesses. An example of a low-cost emission reduction program in which employees can participate is a corporate carpooling campaign. AACOG provides a free corporate carpool service that matches employees with potential carpool partners from the same organization. In addition to providing this service free of charge, AACOG provides free promotional materials and assistance with program implementation. Second, for many companies the *TakeOut* campaign is considered a first step towards participating in clean air measures that could lead to the adoption of other strategies, including quantifiable emissions reductions from business and industry practices. Finally, the campaign can potentially reach a larger audience by encouraging employees to practice carpooling, energy conservation, and other emission reduction strategies in the workplace as well as at home. The *Take Out* Air Pollution campaign will continue throughout 2008 as well.

#### 2.4.5 Promotion

Outreach staff promoted the ACAP program in a number of ways. ACAP seminars and workshops are announced by direct mail, e-mail, and web sites (AACOG and stakeholders). In addition, AACOG partners with local chambers of commerce and other business/industry associations to identify air quality concerns and opportunities within the business sector. In May 2007, AACOG assisted the Greater San Antonio Chamber

of Commerce in conducting *The Business of Air* – a one-day seminar that provided information to business leaders of the region's current air quality status and the implications for the San Antonio area if the region is designated nonattainment. This collaboration with the Greater San Antonio Chamber of Commerce will continue through additional seminars and through continuing participation by AACOG staff in the Greater San Antonio Chamber's Public Affairs Air Quality Committee.

AACOG's Natural Resources staff actively participate in the Environmental Committee of the San Antonio Manufacturer's Association. The Committee, which also includes TCEQ Region 13 staff, addresses air quality and other environmental issues affecting local manufacturing and industrial companies. Participation in the committee proves to be a successful method of engaging businesses in air quality issues such as workshops and meetings focusing on the region's air quality status.

AACOG also works in partnership with other agencies to address emissions reductions among specific companies or industries. In 2006, AACOG participated in a meeting with staff from the San Antonio Metropolitan Health District and TCEQ's Region 13 to discuss a collaborative effort to verify enforcement of clean air measures adopted locally. The rules affect businesses involved in degreasing activities and distributors involved in storage tank refueling operations. Unfortunately, City funding is not available to implement the envisioned process for inspection of local minor point sources for verification of emission rates.

Representatives of AACOG, the City of San Antonio, and TCEQ Region 13 met individually with companies in the cement industry (collectively, a major point source in the area) to discuss voluntary emission reduction measures. These productive meetings resulted in measurable emissions reductions. The success of these efforts is the topic of another report by AACOG staff.

The ACAP program and its goals are also promoted through the annual Walk & Roll Corporate Challenge. The first Walk & Roll *Corporate* Challenge was organized by AACOG and held in June 2006 as a product of the MPO's Walk & Roll Program. Staff asked interested businesses and organizations to appoint a project officer to coordinate their respective organization's participation in the Challenge. Prior to the June events

(2006 and 2007), AACOG conducted Project Officer Rallies to provide company representatives with information about the Challenge, the Alamo Clean Air Partnership Program, and other air quality issues and campaigns.

Because participation in the Corporate Challenge events provided measurable emissions reductions, participating businesses were granted Alamo Clean Air Partnership status for the year(s) in which they competed. Both the 2006 and 2007 Walk & Roll Corporate Challenges were successful events, reducing work-related VMT by 216,138 miles and 564,296 miles respectively.

Staff used the Project Officer Rallies as opportunities to promote clean air measures as well as provide educational materials to some of the largest employers in the region. One of the most popular methods of informing company representatives about air quality issues was an activity developed by staff called *Clean Air Bingo*. The activity was so popular, in fact, that participating companies requested copies of *Clean Air Bingo* to use as promotional materials for encouraging their employees to use alternative forms of commuting and adopt other clean air measures (Figure 11).

Figure 11. Examples of Clean Air Bingo materials used to inform business representatives of air quality messages.



### 2.4.6 ACAP Tools

#### *ACAP Emissions Profile and Emission Reduction Calculator*

The purpose of the ACAP program is to encourage employers in the region to adopt clean air measures; particularly measures that can be quantified in terms of NO<sub>x</sub> and VOC emission reductions. To quantify these measures and distinguish their impact from the business's baseline emissions, staff uses an Excel-based spreadsheet calculator developed by Austin's Clean Air Partners program (Figure 12). AACOG staff modified the formulas in the spreadsheet, when appropriate, to reflect conditions in the San Antonio region that affect emission rates.

Unless privacy issues prevent it, AACOG maintains copies of the ACAP partners' emissions profile/reduction calculator spreadsheets to review for accuracy. The partners are contacted regarding the status of emission reduction activities on an annual basis and the spreadsheets are updated accordingly.

prepared: 1/0/1900

**EMISSIONS PROFILE RESULTS FOR**

For

Contact 1  Contact 2 (optional)

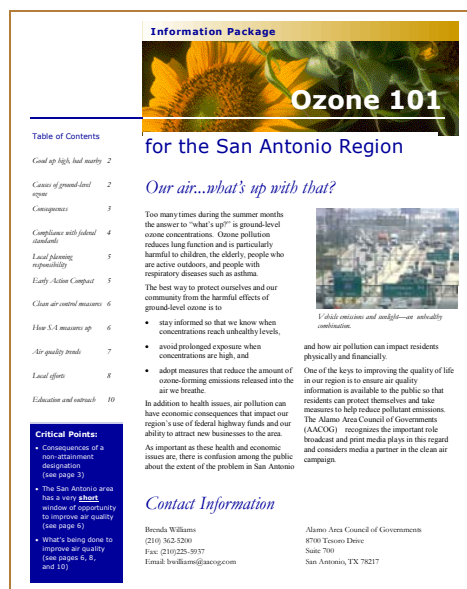
Number of Employees

Emission Category	Emissions Pounds/Year	Emissions % of Total
Employee vehicles	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Company vehicles	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Visitors & customers	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Deliveries	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
<b>Subtotal Vehicles</b>	<b>0.0</b>	<b>0.0%</b>
Electricity use	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Natural gas	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Generators	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
<b>Subtotal Energy Use</b>	<b>0.0</b>	<b>0.0%</b>
Non-road vehicles	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Landscaping activities	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Construction activities	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
<b>Subtotal Equipment</b>	<b>0.0</b>	<b>0.0%</b>
Permitted emissions	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Asphalt	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Fuel dispensing	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Solvent washing & degreasing	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Pesticide & herbicide application	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
Painting & coating	<input type="text" value="0.0"/>	<input type="text" value="0.0%"/>
<b>Subtotal Process and Other</b>	<b>0.0</b>	<b>0.0%</b>
<b>Total Emissions</b>	<input type="text" value="0.0"/> pounds per year from ALL activities	
<b>EMISSIONS BASELINE</b>	<input type="text" value="0.0"/> equivalent daily commuters (based only on commuting employees)	

Figure 12. The emission baseline summary sheet provides ACAP partners with their total NO<sub>x</sub>/VOC emissions inventory subdivided into several categories: vehicle use, energy consumption, equipment operation, and maintenance/industrial processes

### Ozone 101 Brochure

In August 2006, Natural Resources staff developed *Ozone 101 for the San Antonio Region*. The 10-page document was created as an informative brochure that provides more detailed information than most other educational materials distributed by the department. The brochure contains descriptions of air quality in the San Antonio region, sources of air pollution, the impacts of high tropospheric ozone concentrations, and local efforts to improve air quality including the Alamo Clean Air Partnership program and other air quality marketing and educational campaigns.



The target audience for *Ozone 101* includes the media and associations interested in a one-source document for ozone-related issues in the San Antonio region. The document was first presented at a meeting with the San Antonio Express-News' editorial board on September 12, 2006. The meeting spawned a cover story by the Express-

News regarding the region's precarious situation in terms of meeting federal air standards for ozone (Figure 13). Since that time, *Ozone 101* has been provided to media representatives at every press conference in which AACOG's air quality staff have been involved. Other versions of the brochure have been created to target specific audiences and air quality outreach programs.



#### 2.4.7 Progress

The ACAP program has grown substantially since its inception in 2005 when four organizations submitted their emission profile/reduction strategy spreadsheets to staff. Including organizations that obtained partnership status by participating in the Walk & Roll Corporate Challenges, there are 20 employers who have provided measurable emission reductions to staff. The list includes the following businesses and agencies:

- Alamo Area Council of Governments
- Aquifer Guardians in Urban Areas
- Bexar County
- City of San Antonio
- CPS Energy
- Greater Edwards Aquifer Authority
- Harlandale Independent School District
- Joven
- Palo Alto College
- San Antonio-Bexar County Metropolitan Planning Organization
- San Antonio College
- San Antonio Express-News
- San Antonio Police Department
- San Antonio Water System
- Texas Department of Transportation, San Antonio District
- Trinity University
- University of Texas at San Antonio
- USAA
- Valero Energy Corporation
- VIA Metropolitan Transit



## 2.5



### 2.5.1

#### Description and Purpose

The mission of the Alamo Area Clean Cities Coalition is to promote the national Clean Cities initiatives aimed at securing economic, environmental, and energy security. The Coalition provides support for local decisions to adopt practices that contribute to the reduction of petroleum consumption by promoting alternative fuels and vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction.

### 2.5.2 Funding

The Alamo Area Clean Cities Coalition receives funding from a variety of agencies including the Department of Energy (DOE), State Energy Conservation Office (SECO), and the Texas Commission on Environmental Quality (TCEQ). The Rider grant administered by TCEQ provides matching funds required by the Clean Cities contract with SECO.

### 2.5.3 Program Goals

The goal of the Alamo Area Clean Cities Coalition is to develop private and public partnerships to further the alternative fuels market presently in existence in San Antonio and the surrounding region, as well as develop the other Clean Cities petroleum reduction technologies. The Coalition also provides assistance in seeking and acquiring financial resources that will result in implementation of projects that promote Clean Cities technology areas.

### 2.5.4 2006 – 2007 Major Clean Cities Events

#### *Clean Cities Coalition Redesignation ceremony*

AACOG held the Alamo Area Clean Cities Redesignation Ceremony on February 14, 2006. Elected officials including Bexar County Judge Nelson Wolff, City Councilman Chip Haass, Bexar County Commissioner Tommy Adkisson, and Texas Senator Leticia Van de Putte provided their support by participating in the event.

The Department of Energy – the federal agency that administers the Clean Cities program – encourages regional coalitions to undertake the redesignation process every five years. The Alamo Area Clean Cities redesignation ceremony served as a platform

for stakeholders to renew their commitments to alternative fuels and vehicles, idle reduction policies, and other Clean Cities initiatives by signing a Memorandum of Understanding to continue their clean air efforts.

#### *Vehicle Maintenance Workshops*

The Alamo Area Clean Cities Coalition hosted several vehicle maintenance workshops in 2006 as a result of ACAP's Greening Your Business campaign. The workshops were conducted by Franz Hofmann, Lead Automotive Technician from the Texas Railroad Commission. Mr. Hofmann was under contract by SECO to provide assistance of this type to Texas Clean Cities coalitions. The Alamo Area Clean Cities coalition marketed the series of workshops as "Slash Your Fuel Costs" and "Drivers, 'SMART' your Engines!" The workshops targeted fleet operators and provided information about driving techniques and vehicle performance that can enhance fuel efficiency and performance.

#### *CNG Workshop*

On February 16, 2007 the Alamo Area Clean Cities Coalition hosted a Compressed Natural Gas workshop for the City of San Antonio and other regional Clean Cities stakeholders.

At that time, AACOG staff received verbal confirmation from the City of San Antonio as well as VIA and CPS Energy regarding interest in using CNG fuels and vehicles and to hold a follow-up meeting to discuss and begin development of an area-wide infrastructure plan.



#### *Hybrid Taxi Meeting*

On February 22, 2007 the Alamo Area Clean Cities Coalition hosted a meeting with the City of San Antonio and local taxi company owners to discuss the City's proposed hybrid taxi program. The meeting was conducted with the goal to elicit input from the taxi companies and address issues/concerns, which could prevent the implementation of an effective program.



*Clean Cities Advancing the Choice seminar*

On Thursday, July 26, 2007, the Alamo Area Clean Cities Coalition conducted a one-day *Advancing the Choice* seminar on natural gas (Compressed Natural Gas (CNG) and Liquid Natural Gas (LNG)). This followed a proactive measure by the City of San Antonio to replace a portion of the municipality's diesel-powered refuse fleet with cleaner-burning, CNG models. To maintain the interest in natural gas fuels, local governments, businesses, and school districts were invited to attend the seminar and learn about natural gas, e.g., applicability to fleets, opportunities to partner with the City or other organizations, funding opportunities, and infrastructure development.



### 2.5.5 Progress

*H-E-B Ethanol Station*

The Alamo Area Clean Cities Coalition lent support to H-E-B Grocery Company as they began a project to create an ethanol corridor in Texas. In August 2006, H-E-B installed an Ethanol (E85) pump at their store in Schertz. The installation was a key step toward the expansion of the E85 infrastructure in the San Antonio area as well as a component of the IH-35 ethanol corridor being implemented by H-E-B. The Schertz E85 pump dispenses over 1,000 gallons of E85 per week (as of July 1, 2007).

General Motors hosted an E85 promotional event at the H-E-B station in August 2007 by offering, for a limited time, the fuel for .85 cents/gallon and other promotional items. Recent discussions with H-E-B indicated that the company intends to expand the number of stores in the San Antonio area. H-E-B fuels plans to install E85 infrastructure in approximately five additional locations within the next two years.

*Green and Go hybrid taxicab program*

On May 17, 2007 the San Antonio City Council passed *Amended Section 33-003* of the City Code modifying the definition of taxi<sup>5</sup> and adding *Section 33-932* to the City Code to include a permitting process for the Hybrid Taxicab Replacement Program. The Hybrid Taxicab Program ordinance places the City of San Antonio in the forefront of efforts to reduce emissions in the transportation industry. This program was developed through meetings between the Ground Transportation Unit of the San Antonio Police Department, members of the taxicab industry, the Alamo Area Council of Governments and the Texas Commission on Environmental Quality.

The voluntary program offers the taxicab companies incentives to replace their current combustion engine taxicabs with hybrid vehicles. The benefits to the City include reduced emissions and a marketing tool for a very important economic sector in the area: the visitor and convention industry.

*City of San Antonio Compressed Natural Gas (CNG) initiative*

On May 31, 2007 the San Antonio City Council passed an ordinance to purchase 15 refuse trucks powered by Compressed Natural Gas (CNG). The new CNG trucks will replace existing diesel-powered vehicles. As part of Environmental Services and Fleet Maintenance and Operations Department's, ongoing review of alternative fuel diversification and implementation of air quality improvement strategies, cleaner burning CNG vehicles were reviewed. In the past, replacement of heavy-duty trucks consisted of replacing diesel-powered trucks with the newest and cleanest burning diesel trucks available. The City's ordinance represents the first time San Antonio has replaced heavy-duty diesel vehicles with trucks powered by alternative fuels.

CNG trucks cost more than their diesel counterparts; however, it is a necessary cost in furthering the goals of air quality improvement for the City. Also, this extra expense may be mitigated by the reduced cost of CNG fuels. The 2007 CNG engines have been designed to meet EPA's year 2010 diesel NOx (nitrogen oxide) emission reductions standards and are currently awaiting EPA certification, which will allow it to be put into

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<sup>5</sup> The amended code states "The new definition shall include Hybrid Taxicab, which shall mean a taxicab with more than one power source, such as an electric motor and internal combustion engine or an electric motor with battery and fuel cells for energy storage."

production. Once certified, these engines would allow for lower emissions by meeting the 2010 regulations in 2007.

Currently there is no viable CNG fueling infrastructure in the San Antonio area; therefore, the City's conversion to a natural gas fleet will require modifications of a current fuel facility to accommodate a CNG fueling operation, upgrades to the maintenance shop to safely handle natural gas trucks, funds to pay the incremental increase in the truck cost, and required mechanic and driver training to maintain, repair, and operate the trucks. The City of San Antonio has conducted meetings with CPS Energy to evaluate existing infrastructure and requirements necessary to incorporate a CNG fueling dispenser at an existing City Service Center. The Tool Yard (the City's North East Service Center) location was chosen for the CNG fueling site due to favorable site conditions including its proximity to existing CPS Energy infrastructure.

### *Summary*

The Alamo Area Clean Cities Coalition currently has 50 regional and national Stakeholders that participate in outreach activities, alternative fuels projects, quarterly stakeholder meetings, and annual "Advancing the Choice" events. These stakeholders utilize multiple alternative fuels and technologies including hybrid-electric vehicles, propane vehicles, natural gas vehicles and Biodiesel and Ethanol-fueled vehicles. The Coalition works together to provide support and build partnerships to ensure the correct and most viable alternative fuel is chosen for a particular fleet application. Coalition stakeholders consistently provide testimony and experiences with alternative fuels to other stakeholders as well as the public to increase interest and participation in the coalition and its initiatives.

The Alamo Area Clean Cities Coalition continually seeks opportunities for reducing petroleum fuel consumption and emissions through projects with regional fleet operators. For example, the coalition helps districts apply for funding from the USEPA, Blue Skyways Collaborative Clean School Bus USA program to retrofit and replace older school buses in the region. The Coalition monitors the Texas Emissions Reduction Plan for financial incentives to replace construction and other fleet vehicles with cleaner-burning models. Staff also monitors opportunities posted by the EPA and Department of

Energy to ensure regional stakeholders are aware of grants, tax breaks, and other financial incentives for retrofitting or replacing older equipment.

*Chapter 3***Partnerships**

Air quality outreach in the AACOG region is supported and enhanced by the efforts of a number of organizations. Local governments, businesses, schools, and organizations support AACOG's outreach staff by participating in the various Air Improvement Resources (AIR) committees and subcommittees, by encouraging their employees and companies to practice environmental stewardship, and by helping to promote air quality messages to the public. The following paragraphs provide examples of the outstanding support other agencies provide for air quality outreach in the region.

### 3.1 CPS Energy

CPS Energy most recently assisted with the 2007 communications plan by donating outdoor advertising. AACOG staff worked with CPS Energy Corporate Communications staff to produce four billboard advertisements to rotate around the county as well as 52 bus shelter advertisements. Graciously, CPS provided CleanAirDrive.com as the only source on the advertisement (Figure 14).



Figure 14. Bus shelter ad on Broadway Avenue and billboard on I-35 promoting clean air messages in San Antonio.



In addition to advertising, CPS Energy has continued to support AACOG through events and projects. CPS Energy participated in the 2006 and 2007 Walk & Roll Corporate Challenges. CPS Energy also partners with AACOG in the Alamo Forest Partnership and continues to donate trees to increase the region's green space and decrease energy consumption, thus improving air quality in the region.

### *LiveGreenFest*

In April 2006, AACOG partnered with CPS Energy to coordinate LiveGreenFest *Clean Air Drive*. This event served as AACOG's Ozone Season Kickoff for 2006 and attracted over 4,000 attendees. In April 2007, AACOG continued partnering with CPS Energy for the second LiveGreenFest event. Over 3,000 attendees came to the event in spite of the freezing temperatures and holiday weekend.

### 3.2 Texas Independent Automotive Association

The Texas Independent Automotive Association (TIAA) donated the 2006 and 2007 Walk & Roll Challenge Carpooling Winner Prize, a \$100 Gift Certificate to any TIAA shop. The purpose of the award was to encourage the public to participate in the Walk & Roll Challenge by walking, carpooling, or using other alternatives to the typical one-person vehicle trips. TIAA members also participated in the 2006 LiveGreenFest *Clean Air Drive* event at Eisenhower Park to conduct Car Care Alley and perform free emissions tests on vehicles.

In 2006, TIAA received the 2006 TCEQ Environmental Excellence award and attributed receipt of this award to their partnership with AACOG efforts.

### 3.3 San Antonio Water System

The San Antonio Water System (SAWS) consistently assists in clean air project promotion through flyer mailouts and *The Watermark*, employee newsletter, articles. To further awareness of air quality issues in their work place, SAWS invited AACOG staff to conduct brown bag presentations and exhibits for the organization's employees.

In addition to participating in the 2006 and 2007 Walk & Roll Corporate Challenge, SAWS began tracking the number of their employees' alternative commuting miles. As

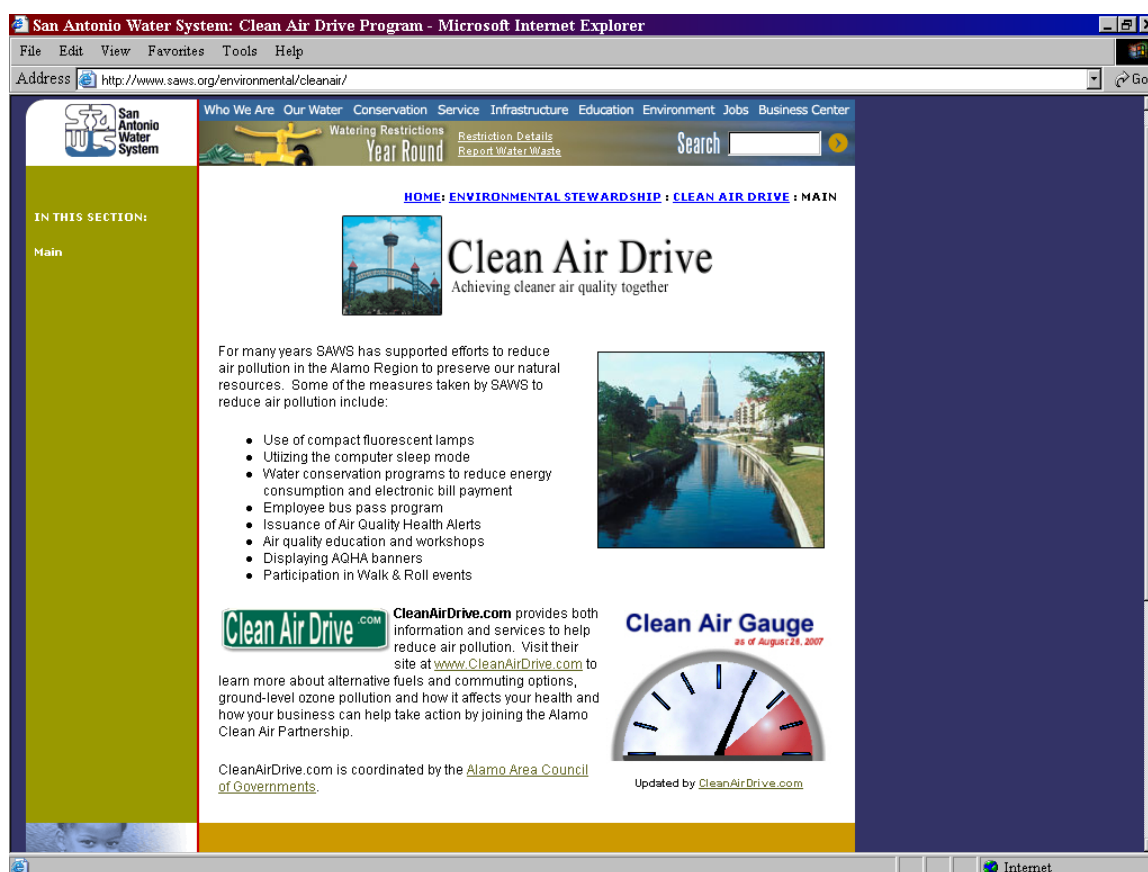


of July 31, 2007, SAWS employees have traveled 30,172 carpool miles for the year.

As of June 30, 2007, SAWS had 17, 731 bus miles recorded for the year.

In response to a request that all AIR Public Education agency members post the CleanAirDrive.com logo and link on their website, SAWS developed an entire Clean Air Drive page to promote the campaign and air quality in general. The SAWS page can be found at: <http://www.saws.org/environmental/cleanair/> (Figure 15).

Figure 15. SAWS Clean Air Drive webpage.



### 3.4 VIA Metropolitan Transit

VIA Metropolitan Transit (VIA) continually supports AACOG projects through advertising. In 2006, VIA donated interior bus cards to promote both the Walk & Roll Challenge and the SCAN USA Air Quality Health Alert program.

VIA also donated the 2006 and 2007 Walk & Roll Challenge prizes to encourage participation in the program. In 2006, VIA donated five Big Passes (\$100 value). In



2007, VIA donated four Big Passes (price increased, still \$100 value). Additionally, VIA has participated in the 2006 and 2007 Walk & Roll Corporate Challenge.

In 2006 VIA kicked off its vanpooling program. In partnership with Enterprise, VIA's vanpooling program matches groups of commuters (minimum of six commuters needed) and provides a subsidy to rent a van. Currently VIA is partnering with AACOG's River Cities Rideshare program to include vanpool matching.

### 3.5 San Antonio-Bexar County Metropolitan Planning Organization

The San Antonio-Bexar County Metropolitan Planning Organization (MPO) annually coordinates Walk & Roll month in May to promote improved transportation and health for the region.

Throughout the year, MPO staff conducts Safe Routes to School workshops and invites AACOG staff to present. MPO staff also conduct Bike Rodeos at elementary schools to promote safe cycling efforts.

The MPO actively promotes alternative commuting habits. As a planning partner, the MPO donated the Walking and Cycling category prizes for the 2006 and 2007 Walk & Roll Challenges. Each category winner received a \$100 gift certificate to an athletic/outdoors shop of his/her choice.

### 3.6 City of San Antonio

The City of San Antonio (COSA) actively adopts measures to improve air quality and supports efforts to promote clean air messages among the public. Previous sections of this report described the City's Hybrid Taxi Program, the Air Quality Health Alert banner campaign initiated by Councilman Chip Haass, and the CNG refuse truck replacement program. In addition to these measures, there are a number of other clean air initiatives that COSA has implemented.

- COSA provides a bus pass program to its employees. As of July 31, 2007, 7,266 bus passes have been purchased by COSA staff.

- As a Texas Energy Partner, COSA has made many energy strides. For example, COSA replaced incandescent exit lights with low-energy LED lights at the Alamodome.
- COSA installed programmable thermostats at multiple city facilities.

COSA adopted several sustainable design elements at the Aviation Department's terminal. A combination of low-e glass, exterior screening devices and a curbside canopy were installed to provide abundant natural light and visual transparency at the curbside façade of the ticketing hall, with minimal heat gain. All entrance vestibules at both Arrivals and Departures levels will be pressurized, minimizing the amount of outside air admitted to the building. The HVAC system will deliver chilled and hot water to the new terminals by a variable speed pumping system, using less energy when the demand is lessened. The recent decision to install similar pumps in Terminal 1 will result in energy savings equivalent to the power required to continuously drive a 20-horsepower pump.

The automatic lighting controls are included in the design, including daylight sensors to switch off selected fixtures when sufficient sunlight is available. Lamp choices for all fixtures were made to achieve the highest levels of efficiency. Lamps are all fluorescent or metal halide.

Further steps to reduce energy include planning to convert/upgrade 18 school flashing signs from incandescent to solar, which will eliminate 1,080 kilowatt hours.

COSA is currently retrofitting two parking garages—Mid-City Parking Garage and Marina Parking Garage (in operation twenty-four hours a day). An efficient lighting system will potentially reduce energy consumption by 115,000 kilowatt hours annually. Each parking facility will include retrofits from T12 to high efficiency compact fluorescents, T8 lamps and electronic ballasts and exit signs will be converted to LED lamps.



COSA will coordinate a 30-day pilot of the *Solar Trash Container*. It is a trash compactor with a fully integrated solar panel that stores power in a twelve-volt battery. It is anticipated that the container will undergo frequent use and visibility being located near the Alamo.



Tax abatements for new commercial buildings that are certified LEED are provided through the Economic Development Department's Incentive Scorecard Program. The Neighborhood Services Department rebuilt over 25 homes to LEED standards through the housing rehabilitation program. In 2007, an additional 30 homes will be built with green building components.

With the Metropolitan Partnership for Energy, COSA conducted a Green Building Workshop for Suburban Cities in April 2007. This workshop provided information to public officials and their city management on the feasibility and benefits of adopting a green building resolution. The City of San Antonio City Council on April 19, 2007 passed and approved a green building resolution for all future city facilities. The resolution mandates that all future new city facilities be certified LEED Silver. On January 11, 2007, Council approved an ordinance to adopt amendments to the city's energy conservation code. The amendments include energy controls for heated pools and outdoor lighting. The ordinance also mandated that all illuminated exit signs not exceed five watts per side.

### 3.7 Texas Department of Transportation

The Texas Department of Transportation (TXDOT) San Antonio District reclaimed its Commuter Challenge Cup in 2007 by winning the Walk & Roll Corporate Challenge, for the second year in a row. TXDOT employees logged an average of 50 miles per employee in the 2007 Challenge.

TransGuide continues to display *Air Quality Health Alert* notices for increased public awareness. With these alerts, action messages are included, such as *refuel in the evening*.

### 3.8 Bexar County

Bexar County actively participates in the Clean Cities program. The county also built the first publicly-accessible ethanol station in Texas and installed solar water heaters. In 2006, the county implemented a VIA Bus Pass Subsidy program in which all Bexar County employees may ride the bus for free

### 3.9 Partnership Summary

The action and support of local agencies make the air quality outreach program a true success. Local agencies acting as members of the AIR Public Education Committee participate in the planning, promotion, and production of outreach projects. These agencies collaborate with AACOG staff to plan events, advertising, and promotional/educational material to increase public awareness of air quality issues. These agencies also take initiative outside committee meetings to support the clean air effort in the region. Their work has significantly enhanced the air quality outreach and education programs in terms of audience size, message venues, visibility, and measurable emission reductions in the region.

*Chapter 4*

## Measures of Progress

The AACOG region air quality outreach and educational programs are continually evaluated and revised as appropriate to ensure progress is being made towards increasing audience size, recognition of messages, and participation in emission reduction measures. Progress is evaluated using a variety of methods: surveys, number of media items produced and published, requests/inquiries from organizations and individuals, and participation in air quality outreach/education events and programs. Progress is also measured in terms of quantifiable NOx and VOC emission reductions; because of their importance, however, measurable reductions are treated separately and presented in Chapter 5 of this report.

### 4.1 Surveys

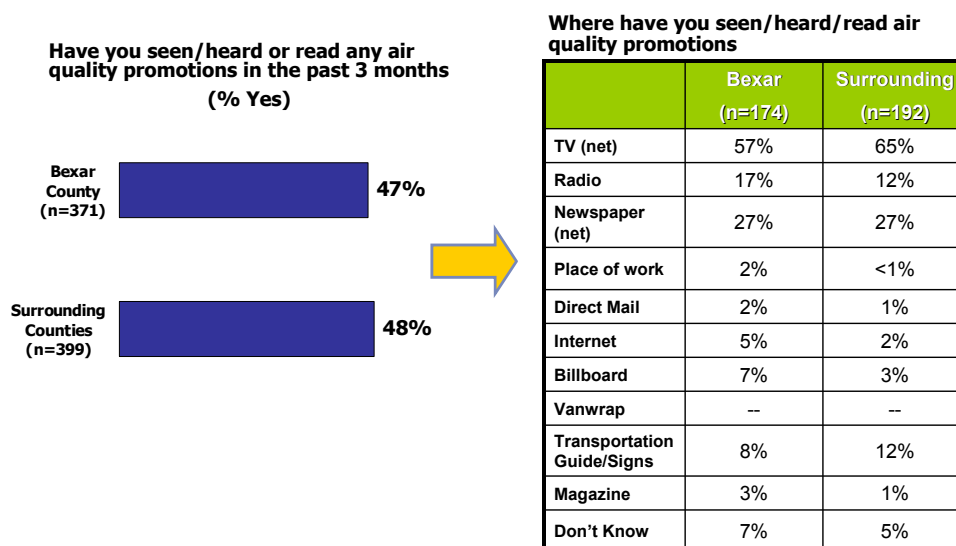
#### 4.1.1 Pre-2006/2007 Independent Survey

In preparation for the 2006 outreach campaign, Natural Resources staff contracted with Ipsos Insight – a marketing research company – to determine how wide a geographical area the air quality messages were dispersed and which venues most effectively delivered the messages. The survey was conducted in the fall of 2005 and revealed that, indeed, the messages were reaching beyond San Antonio/Bexar County and into the more rural surrounding counties. The survey also revealed people were much more likely to remember messages aired on television than any other media type.

In answer to the question, “Have you seen/heard or read any air quality promotions in the past 3 months,” 47% of the respondents in Bexar County answered yes; similarly 48% of the respondents in 11 surrounding counties answered yes.

When asked “Where have you seen/heard/read air quality promotions,” the most common answer was television. In Bexar County, 57% of the respondents recalled watching ads on television compared to 65% in surrounding counties.

Table 4. Results of survey question regarding air quality message venues.  
Source: Ipsos Insight, 2005.



Q22 During the last 3 months, have you seen , heard or read any messages advertisements or news reports or articles promoting cleaner air quality? (N=770) Q23 Where did you see, hear or read the message advertisement, new reports or articles? (n=366)

Television is an expensive medium to convey air quality messages. For example, airtime is typically much more expensive for television than radio. When the size of the audience is factored into the cost of television advertising, however, the expense is in line with other venues. Because television was identified as an important medium by the survey contractor, staff ensured the 2006 and 2007 advertising campaigns included English- and Spanish-language air quality commercials.

#### 4.1.2 AACOG-Conducted Surveys

AACOG typically conducts pre- and post-ozone season air quality surveys using in-house staff. To gauge success in promotion and education during ozone seasons, AACOG conducted two Regional Awareness Surveys in 2006: spring pre-ozone season and fall post-ozone season.<sup>6</sup> Surveys were distributed primarily through the AACOG Workforce Centers to include a regional spread in respondents. Surveys were collected from respondents living in the following counties: Atascosa, Bandera, Bexar, Comal, Frio, Guadalupe, Kendall, Kerr, Medina, and Wilson. In spring 2006 AACOG surveyed

<sup>6</sup> A pre-ozone season survey was also conducted in spring 2007; however, the post-ozone season survey results will not be available until early 2008.

203 respondents while in fall 2006 AACOG surveyed 259 respondents. Table 5 describes the 2006 spring and fall survey results.

Table 5. 2006 Spring and Fall Regional Awareness Survey Results

<b><i>Do you agree or disagree with the following statements?</i></b>			
<b>Statement</b>	<b>Median Response</b>		<b>Comments</b>
	<i>Spring</i>	<i>Fall</i>	
<i>Air quality affects your health</i>	Strongly Agree	Strongly Agree	While no change in the response level between the two surveys, the response justifies outreach efforts.
<i>Refueling in the evening reduces air pollution</i>	Agree	Agree	
<i>Driving less will improve air quality</i>	Agree	Agree	
<i>"Topping Off" wastes fuel and money</i>	Neither	Neither	Respondents do not make the connection between <i>topping off</i> and air pollution.
<i>Proper tire pressure improves gas mileage</i>	Strongly Agree	Strongly Agree	The response displays a strong understanding in gas mileage and tire maintenance.
<b><i>How have you heard of the following programs/projects?</i></b>			
<b>Program/Project</b>	<b>Total Percent Heard</b>		<b>Comments</b>
	<i>Spring</i>	<i>Fall</i>	
<i>Clean Air Plan</i>	83%	81%	The most popular source for this program was television with approximately 50% of respondents selecting this source. In previous campaigns, AACOG used the slogan <i>Be Part of the Clean Air Plan</i> .
<i>Air Quality Health Alerts</i>	89%	93%	The response shows a slight increase in the post-Ozone Season survey. Eighteen alerts were issued in the 2006 Ozone Season. Television again was the most popular source for this message.
<i>It All Adds Up To Cleaner Air</i>	67%	64%	This campaign is not heavily promoted by AACOG.
<i>Drive Clean Across Texas</i>	78%	84%	AACOG ran DCAT ads for the 2006 advertising campaign on both television and radio outlets. These two sources were also most popular with respondents.
<i>Commute Solutions</i>	75%	74%	Rather than overwhelm the public with various campaign messages, AACOG moved toward a universal campaign, Clean Air Drive. This



			campaign was developed in 2006 and significantly pushed in 2007.
<i>Clean Cities</i>	73%	66%	
<i>Alamo Clean Air Partnership</i>	68%	63%	
<i>Alamo Area Council of Governments</i>	81%	74%	
<b>What reasons would encourage you to do the following?</b>			
<b>Activity</b>	<b>Total Percent to Act</b>		<b>Comments</b>
	<i>Spring</i>	<i>Fall</i>	
<i>Carpool</i>	83%	85%	Money Savings served as the primary motivator for people to carpool (69% - 77% of respondents selected this reason).
<i>Ride the Bus</i>	65%	69%	Again, Money Savings served as the primary motivator for respondents.
<i>Bicycle</i>	73%	74%	Personal Health served as the primary motivator.
<i>Walk</i>	79%	81%	Again, Personal Health served as the primary motivator.
<i>Alternative Work Schedule</i>	46%	58%	AACOG believes this increase resulted from increased knowledge and understanding of the Alternative Work Schedules. Convenience served as the primary motivator for this action.
<i>Combine Errands</i>	80%	81%	Respondents claimed Money Savings to be the primary motivator for this action.
<i>Turn off your engine while waiting</i>	83%	84%	The primary motivator for this action is to Reduce Pollution with approximately 60% of the respondents claiming that reason. Second is Money Savings.

No significant change was found between the two surveys. When speaking with citizens, AACOG staff found that the general population knows the campaign messages, but they do not know why they are important. AACOG made a goal for the 2007 campaign to increase education efforts and explain to the general population why they should make these changes.

## 4.2 Media Campaign

### 4.2.1 *Paid Advertising*

The Commute Solutions program provides funding for developing a paid advertising campaign. To leverage resources and emphasize consistent messages, AACOG aired English- and Spanish-language advertisements developed by Drive Clean Across Texas (DCAT). Texas Transportation Institute's (TTI) Drive Clean Across Texas (DCAT) program also purchased radio and television airtime in the San Antonio region. DCAT's 2006 campaign ran in June and August. To maintain consistency and reinforce DCAT's air pollution messages, AACOG aired the TTI-developed ads as well and scheduled run times for weeks between and after DCAT's June and August campaigns. In 2007, DCAT's campaign ran in July and August, utilizing television, radio, and outdoor advertising. AACOG continued running TTI-developed ads, both radio and television, to strengthen summer air quality awareness.
















In addition, radio was used extensively to target specific audiences. Examples include the Hispanic community (through KLEY-FM) and young drivers (through KISS-FM).

The 2006 and 2007 advertising campaigns were broadcast using a variety of media: television, radio, newspaper, billboards, and bus shelters. Advertising was scheduled to maximize the number of air quality messages aired during months when ground-level ozone peaks and to promote air quality outreach events conducted in the fall. Tables 6 and 7 provide information regarding the number of and dates when advertisements were aired/displayed.

Table 6. Number of advertisements and promotional messages aired/displayed in 2006 and 2007.

Purchased By	2006		2007		
	AACOG (funds provided by TxDOT)	Drive Clean Across Texas	AACOG (funds provided by TxDOT)	Drive Clean Across Texas	CPS Energy
Television Ads	144	Unavailable	91	944	NA
Radio Ads	547	Unavailable	783	850	NA
Media Web Banner Ads	3 Months 3 Websites	NA	4 Months 3 Websites	NA	NA
Billboard Ads	NA	NA	NA	4	4
Bus Shelter Ads	NA	NA	NA		52
Bookcovers	NA	NA	NA	40,750	NA

Table 7. Air/display dates of 2006 and 2007 advertising campaigns.

2006 Media Campaign	June				July					August				September				October					November			
Type:	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27
Radio Ads English/Spanish																										
Outdoor Billboards																										
TV Ads English/Spanish																										
Internet Banner Ads																										
TV Stations																										
Radio Stations																										

2007 Media Campaign	June				July					August				September				October				November			
Type:	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	8	15	22	29	5	12	19	26
Radio Ads																									
English/Spanish																									
Outdoor Billboards																									
Bus Shelters																									
TV Ads																									
English/Spanish																									
Internet Banner Ads																									
TV Stations																									
Radio Stations																									
Print Ads																									
Newspapers																									
Bookcovers																									

Purchased by AACOG

Purchased by Drive Clean Across Texas

Purchased by CPS Energy



#### 4.2.2 In-Kind Promotion

AACOG staff sought in-kind promotion as another means of maximizing the advertising budget. For the \$33,485 investment in paid advertising during 2006, AACOG received \$53,420 in added value promotions. In addition, a number of stations ran public service announcements (PSAs) with air quality messages. Staff anticipates similar levels of in-kind promotion by the time the 2007 television, radio, and billboard campaigns are complete.

#### 4.2.3 Clean Air Gauge Promotion

In response to the request and initiative from the Air Improvement Resources Committee to develop a 2007 ozone season visual, AACOG produced the Clean Air Gauge. Unveiled in April 2007, AACOG requested local agencies post the image on their websites. The gauge is updated based on the fourth highest eight-hour average ozone recorded in the region, which are automatically updated on partners' websites. The Clean Air Gauge can now be seen on 14 different websites. Not only has the Gauge served as a visual tool to emphasize the importance of the 2007 Ozone Season, it has enhanced clean air partnerships.

#### 4.3 Requests and Inquiries

AACOG is often contacted by the media, schools, civic organizations, businesses, and individuals to provide information about regional air quality. Hence, staff conducts interviews, presentations, and lesson plans to various groups throughout the year. A list of the presentations and interviews in which staff participated between January 2006 and August 2007, along with data on the audience size and other relevant information, are provided in Appendix B.

#### 4.4 Web Site Visitors

AACOG created the CleanAirDrive.com website in 2006 to better brand air quality efforts. Promotion of the website, however, was minimal. With further site development in 2007, promotion of the site and campaign significantly increased. CleanAirDrive.com was printed on all outreach materials to better drive visitors to the website. Visitors to the website has increased from 111 in January 2007 to 95,903 in July 2007 alone. Many factors contribute to the success of the site. The name alone is a factor; CleanAirDrive.com is a simple to remember and self-explained domain name. In

addition to printing the name on outreach materials and promoting the site at events, CleanAirDrive.com was heavily used in the 2007 advertising campaign in radio and TV ads as well as banner ads on websites. The first significant jump in visitors to the site is found in May 2007 with 8,073 visitors. This jump is directly attributed to the Clean Air Gauge, which began being posted to local agency websites in May. CPS Energy donated four billboards and 52 bus shelter ads from their campaign to the CleanAirDrive.com effort. These outdoor ads, displaying only CleanAirDrive.com and a simple air quality message, were produced in July provided another jump in web visitors. See Appendix C for further details for the CleanAirDrive.com website.



The success of the 2006 air quality outreach and educational programs and campaigns are summarized in the report 2006 Outreach Campaign Summary - Air Quality Programs. The report was developed for and presented to the Air Improvement Resources Committee during their December 13, 2006 meeting. Appendix D contains a copy of the 2006 Outreach Campaign report in its entirety.

## Chapter 5 Quantifiable Emission Reductions

Some of the most important measures of outreach effectiveness calculated by staff are quantifiable emission reductions. When gathering quantifiable data, staff includes emission reductions from a wide range of measures – from changes in industrial processes to participation in the Walk & Roll Challenge events.

What distinguishes measurable reductions from other air quality efforts is data that can be converted, through the application of emissions factors and other rates, into NO<sub>x</sub> and VOC reduction estimates. For example, businesses that participate in AACOG's Air Quality Health Alert notification program may influence their employees' driving behavior on Alert days, thereby reducing NO<sub>x</sub> and VOC emissions. Without data to quantify how the Alert notifications are actually influencing VMT, however, staff is unable to estimate the impact of the program in terms of emission reductions. Conversely, the Walk & Roll Challenge event requires that participants log the number of alternative commuting miles (e.g., carpooling, walking, riding the bus) they accumulate each day. This alternative commuting information is used to estimate decreases in VMT and reductions in VOC and NO<sub>x</sub> emissions. Staff estimated emission reductions using quantifiable data from participants in conjunction with such information as MOBILE6 emission factors and temporally allocated temperature, humidity and VMT data for the local area.<sup>7</sup>

### 5.1 Participation in the Walk and Roll Challenge Events

AACOG staff began conducting the Walk & Roll (public) Challenge in October 2005 and the Walk & Roll Corporate Challenge in June 2006. The events evolved from the San Antonio-Bexar County MPO's Walk & Roll program that promotes measures to reduce traffic congestion. Both the Walk & Roll Challenge and Corporate Challenge are conducted on an annual basis, although they are held at different times of the year as described in previous chapters.

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<sup>7</sup> The San Antonio area VMT estimates were developed by Texas Transportation Institute and categorized by vehicle class.





During the events, participants log the number of miles they use alternative forms of transportation on the Walk & Roll Challenge web site.<sup>8</sup> The data participants enter on the web site is compiled in an Excel spreadsheet that totals the number of miles logged in each category: walking, cycling, carpooling/vanpooling, opting to eat at the office (rather than drive to a restaurant) and telecommuting. Staff estimates the amount of reduced VMT from participants' entries and calculates emission reductions using emission factors from MOBILE6. Since Walk & Roll Challenge events target commuters, only the model's light-duty gasoline vehicle data were included in the calculation to determine an average emission factor per vehicle (Table 8). For information on how the emission factors were extracted, see Appendix E.

Table 8. MOBILE6 Emission Factors for light-duty gas vehicles, 2007

LDGV		LDGT12		LDGT34		VMT Adjusted EF	
VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
0.87	0.67	1.13	0.93	0.77	0.91	0.93	0.75

The MOBILE6-based emission factors are provided in grams per mile. Staff used the following formulas to convert VMT information totaled by the Walk & Roll web site to NOx and VOC emission reductions in pounds:

Pounds of NOx Reduced = VMT x 0.75 (average NOx emission factor for LDG vehicles in grams/mile) x 0.002205 (to convert grams to pounds)

Pounds of VOC Reduced = VMT x 0.93 (average VOC emission factor for LDG vehicles in grams/mile) x 0.002205 (to convert grams to pounds)

The results of the emission reduction calculations are provided in Table 9. Until 2007, all Walk & Roll Challenges were one-month events. However, the 2007 Walk & Roll

<sup>8</sup> The Walk & Roll Challenge web site is maintained by AACOG and can be accessed at: <http://www.walkandrollchallenge.com/>



(public) Challenge was changed to a 4-month event that will not end until October 31, 2007. Therefore, the results have not yet been tallied for the 2007 public Challenge.

Table 9. Estimated reductions of NO<sub>x</sub> and VOC during the 2006 and 2007 Walk & Roll Challenge events.

	VMT Reductions	NO <sub>x</sub> Reductions in Pounds	VOC Reductions in Pounds
June 1 – 30 2006 Walk & Roll Corporate Challenge	216,137.8 miles	332.5	410.0
October 1 –31 2006 Walk & Roll (public) Challenge	58,449.6 miles	97.2	217.0
June 1 – 30 2007 Walk & Roll Corporate Challenge	564,295.7 miles	938.0	1,156.8
July 1 – October 31, 2007 Walk & Roll (public) Challenge	In Progress		

## 5.2 Emission Reductions from Alamo Area Clean Cities Stakeholders

The Clean Cities program promotes the use of alternative fuels and vehicles, hybrid electric vehicles, and technologies and practices that decrease the amount of time vehicle engines are idled. The Alamo Area Clean Cities Coalition Coordinator documents the use of alternative fuels and other Clean Cities initiatives for the AACOG region. This data is provided to the U.S. Department of Energy annually and forms the basis for measurable emissions reductions for the Alamo Area Clean Cities stakeholders. In total, regional Clean Cities stakeholders reduce VOC emissions by approximately 16 tons a year and NO<sub>x</sub> emissions by more than 50 tons a year.

## 5.3 Emission Reductions from AACOG's Green Patrol Program

The first Green Patrol program was begun at Camelot Elementary in San Antonio during the spring of 2007. AACOG staff observed parent behavior at Camelot Elementary in September 2006 to develop a baseline on which to measure the effectiveness of the program. Staff recorded 35 idling vehicles at that time. During the school year, 35 vehicles idling for an average of 15 minutes a day would produce about 485 pounds of pollution (volatile organic compounds, carbon monoxide, and nitrogen oxides). AACOG staff returned on May 21, 2007 to observe the school traffic during dismissal; only nine vehicles were idling. That represents a reduction of approximately 460 pounds of pollution per year. Although parent behavior was based on only two days of observations, nevertheless, the results indicate the program is successful.

The pilot program at Camelot Elementary will be used to promote Green Patrol to other schools in the AACOG region. As more schools adopt anti-idling measures, staff will

have the opportunity to conduct additional research on how the program affects driver behavior.

#### 5.4 Emission Reductions from Carpooling Program

Historically, AACOG staff received very little feedback from RideShare participants regarding the number of miles they carpoolled or vanpooled. Offering incentives for reporting the number of alternative miles they commuted did little to increase the amount of information reported to staff from participants.

One of the primary reasons AACOG contracted for an on-line carpool matching service was to increase the amount of data received about carpoolers in the region. The web-based system automatically tabulates information regarding the length of participants' commutes and how often they carpool. In addition, the system can be set up to query participants regarding use of the RideShare program in order to encourage continued feedback of measurable data. The service provider, Ecology and Environment, Inc., included features in the system that allows AACOG, as the administrator, to run reports quantifying carpool data in terms of VMT and emissions reduced; however, the online service is not expected to be fully functional until fall 2007. Consequently, meaningful data on measurable emissions reductions from the program will probably be unavailable until early 2008.

#### 5.5 Emission Reductions from ACAP Partners

Members of the Alamo Clean Air Partnership develop their emissions baseline and emission reduction profiles using the ACAP spreadsheet (originated by the Austin Clean Air Partnership and modified by AACOG staff). The spreadsheets submitted by businesses and agencies throughout the AACOG region are reviewed by staff for accuracy and updated on an annual basis. The total annual emissions reductions for the ACAP program in 2006, based on spreadsheets submitted to AACOG or developed by AACOG on behalf of ACAP partners, indicates a total reduction of 1.5 million pounds of VOC and NOx.

#### 5.6 Emission Reduction Commitments from Other Businesses/Industries

Staff works with individual industry and business representatives to reduce emissions from point sources. Some efforts to collaborate with industry regarding emission

reductions have been very successful. A prime example is the measures adopted by Capital Cement.

AACOG and TCEQ Region 13 staff met with Capital Cement representatives to determine whether the company could reduce emissions from operation of their cement kilns. The company operated both a wet kiln and dry kiln. Based on photochemical modeling conducted by AACOG staff, Capital Cement voluntarily shut down the wet kiln and intends to place selective non-catalytic reduction controls on the dry kiln. The combination of shutting down the wet kiln and improving the emission control system on the dry kiln will reduce NOx emissions from the company's operations by approximately 1,600 tons per year.

### 5.7 Summary

Through participation in the Commute Solutions, Alamo Clean Air Partnership, and Alamo Area Clean Cities outreach programs, staff documented the impact of emission reduction strategies and programs adopted by regional businesses and communities. Collectively, these strategies reduce regional ozone precursor emissions in excess of 2,300 tons annually. With greater marketing and improved feedback mechanisms – such as that provided by the automated River Cities RideShare carpool system – these reductions are expected to become increasingly significant when compared to the annual emissions inventory for the region.

AACOG will continue to obtain measurable emission reduction commitments from employers and industries in the region. In the past, staff focused on the largest employers, point sources, and fleet operators within the 12-county AACOG area. While marketing to this audience will continue to be a focus, staff intends to increase outreach efforts with small- to medium-size businesses as well.

Section 3:  
City of San Antonio's Air Quality Health Alert Plan 2007

## References

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Section C-3

City of San Antonio's Air Quality Health Alert Plan 2007





# AIR QUALITY HEALTH ALERT PLAN 2007

## I. INTRODUCTION

During the ozone seasons of 2000-2002, local air quality monitors in the San Antonio region recorded ozone levels above the concentrations allowed by the federal clean air standard. In June 2002, area monitors recorded some of the highest values since 1998. The U.S. Environmental Protection Agency (EPA) clean air ruling states that the Metropolitan Statistical Area (MSA) is to be considered the boundary to develop future air quality plans. However, the MSA was redrawn during the air quality designation process. Therefore, the EPA decided to consider the previous MSA (consisting of Bexar, Guadalupe, Comal and Wilson Counties) as the San Antonio air quality region. Expecting that this area may be designated as non-compliant or "non-attainment", the Alamo Area Council of Governments (AACOG) and the Counties and Cities within the air quality region submitted in 2002 an Early Action Compact to the Texas Commission on Environmental Quality (TCEQ) and the EPA. Under this agreement, the EPA agreed to designate the area "non-attainment (deferred)" and not require any of the traditional "non-attainment mandates". More importantly, the area was given an opportunity to implement strategies quicker to clean up the air faster.

As of today, San Antonio is designated "non-attainment (deferred)". A new three year average will be compiled using ozone measurements from 2005, 2006 and 2007. San Antonio will be redesignated in 2008. San Antonio may still be considered a clean air city as long as the air pollution measurements for this season not exceed 81 parts per billion (ppb). This season will determine if the San Antonio area will be in violation of the federal air pollution standards. It is important that the San Antonio area stay vigilant with regards to air quality efforts and steer clear of "non-attainment".

In an effort to reduce ozone pollution, the City of San Antonio has participated in TCEQ's episodic "Ozone Action Day" program. In the San Antonio area, we call it Air Quality Health Alerts (AQHA). This program targets specific days that may result in high ozone levels. The TCEQ notifies the community of an impending AQHA by 2 PM the day prior to an anticipated high ozone day in order to provide the community time to modify activities. Through outreach efforts, citizens are provided information on altering activities that reduce emissions and pollution and consequently lower ozone levels.

This *Air Quality Health Alert Plan* (AQHAP) establishes guidelines and procedures for reducing emissions of ozone-forming compounds into the atmosphere, both on "Alert" days as well as throughout the ozone season. City Departments, through voluntary compliance with the AQHAP, will modify certain activities on AQHA days. This year will be the tenth year that the City has reviewed and implemented a plan to reduce ozone. All essential and emergency services remain unaffected. Since the implementation of the AQHAP, many Governmental Agencies, School Districts, and Industries have developed their own Air Quality Plans. To date, over 300 plans were developed by private industry, Local Governments and School districts, and Clean Cities Coalition Stakeholders. These Agencies have voluntarily committed to reducing air pollution by submitting their plans to the Council of Governments for record.

## II. BACKGROUND AND HISTORICAL INFORMATION

What is ground-level ozone? Ground-level ozone is the major component of smog and is not typically emitted directly from any source. Ozone is generally created in urban environments as a result of air pollution. Uncontrollable factors such as sunlight, high temperatures and low winds combine with controllable emissions to form ground-level ozone. Emissions that contribute to ozone formation can be grouped into two basic classes: 1) volatile organic compounds (VOCs), such as fuels, solvents, paints, etc. and 2) oxides of nitrogen (NOX), which form as a by-product of combustion. Ground-level ozone can damage your health, aggravating allergies, asthma, and lung disease. Groups, such as children, field workers and the elderly, are most sensitive to increased levels of ground-level ozone.

The City believes that San Antonio can achieve clean air this ozone season if the entire community works together to reduce emissions, especially on AQHA days. To date, the San Antonio region has implemented numerous voluntary emission reduction programs, including episodic and year-round programs, use of alternative fuels in local fleets, and technical studies to characterize our situation. The two largest local sources contributing to ozone in San Antonio are: (1) area sources, such as residential and commercial painting, refueling activities, and construction sources; and (2) mobile sources including automobiles, trucks, etc. In order to improve air quality in San Antonio, reducing emissions from automobile engines is critical.

## III. EMISSION REDUCTION MEASURES

Many City departments' operations consist predominantly of indoor duties. However, the use of City vehicles is sometimes required. Therefore, emission reduction measures are related to: (1) the use of alternative fuels in the entire City fleet; (2) reductions in emission from fueling activities; and (3) reductions in vehicle miles traveled, including trip reduction, car-pooling, rescheduling, encouraging use of public transit.

### **Refueling Plan**

Upon receiving AQHAD notification, Purchasing Department on-duty supervisors at all fueling facilities will post AQHAD signs at entrance gates advising drivers of the next day's AQHAD and to refuel before close of business. Immediate action will be taken by all employees to refuel all assigned vehicles.

Gasoline pumps at Northeast, Northwest, Southeast, and Zarzamora Fleet Maintenance Service Centers, and the Patrol East, Patrol South, Patrol North, Police Headquarters Fueling Facility, Prue Road, Police Academy and the Airport have been upgraded with vapor recovery systems. With this addition, vehicles will be allowed to refuel without restrictions during the ozone season. Vehicles refueling with diesel, propane or compressed natural gas will not be restricted, nor will vehicles refueling at a service center retrofitted with Stage II VRS. All essential emergency service vehicles will be allowed to refuel as needed. A list of Designated Essential Vehicles have been established and are reviewed by the Public Works, Environmental Services, and Purchasing Departments and maintained by the Purchasing's Fleet Operations Division.

**City Motor Pool Operations**

During AQHADs, City motor pool vehicles will be issued only to drivers that have been cleared by their Department or Assistant Director, or Liza Meyer, Special Projects Coordinator – Air and Energy or Appointed Department Environmental Advisor(s) to perform essential duties. Such authorization will be documented on an authorization form furnished by each department to the Fleet Operations Division of Purchasing and General Services.

**IV. AIR QUALITY HEALTH ALERT DAY NOTIFICATION PROCEDURE**

To implement this AQHAP and to monitor progress and compliance, each department Director has appointed one individual for the Department Environmental Advisors (DEA) insuring that all of the City's efforts are coordinated. The Environmental Services Department will notify each coordinator when AQHA are announced by the TCEQ. The DEA is then responsible for ensuring all departmental personnel are notified. When an Air Quality Health Alert Day is called:

1. The TCEQ will notify the AACOG by 2:00 PM the day prior to the predicted event. AACOG administers a fax broadcast system to over 300 organizations in the San Antonio region notifying them of an upcoming AQHAD. The Environmental Services Department is the first point of contact at the City.
2. The Environmental Services Department will notify each DEA or alternate. Notification will be made by e-mail to all city employees by e-mail. Alternative notification arrangements can be made for DEAs who do not have regular access to the City email system. Employees will also be notified by an e-mail message sent to all COSA users from the Environmental Services Department. DEAs are responsible for notifying their department and all employees who do not have access to e-mail. Employees are encouraged to respond to notifications received from TransGuide, local media, or other forms of communication.
3. Station One will have a direct calling list for weekend notification.
4. Employees may contact the Environmental Services Department, at 207-6449, or the TCEQ hotline, at 1-800-64TEXAS, if they need to confirm an AQHAD or are not receiving notification.

The individual Department Directors and DEAs will be responsible for the implementation of their departmental action plan. The Environmental Services Department will assist in insuring compliance by monitoring and providing recommendations to the Departments.

## V. DEPARTMENT ENVIRONMENTAL ADVISORS

DEPARTMENT	ADVISOR	PHONE
Alamodome	Darryl Baethge	207-3671
Asset Management	Lucrecia Cisneros	207-4032
Aviation	Frances Sherertz	207-3533
City Attorney	Chris Brown	207-8961
City Clerk	Jim Randle	207-6384
City Council Offices	Chris Callanen	207-7045
City Manager's Office	Erik Walsh	207-8336
Code Compliance	Steve Lopez	416-5993
Communications and Public Affairs	Scott Wudel	207-4494
Community Initiatives	Juan Morales	207-5846
Convention and Visitors' Bureau	Alice M. Lee	207-6851
Convention Facilities	Robert Carr	207-8528
Cultural Affairs	Lewis Andrews	207-6962
Customer Service/311	Terri Salazar	207-3313
Development Services	Brenda Guzman	207-8371
Downtown Operations	Bruce Martin	207-2079
Economic Development	Anita Martin/Ed Summers Susan Rios/Ed Davis	207-3901/ 207-3949/ 207-8163/ 756-4198
Environmental Services	Liza C. Meyer	207-6449
Finance	Leticia Wawrzyniak	207-8648
Fire/EMS	TBD	TBD
Housing and Community Development	Connie Munoz	207-5474
Human Resources	Rosemary Avalos	207-2030
Information Technology Services	Curtis Klaerner	207-7575
International Affairs	Cynthia Silva	207-8190
Library	Richard Denning	207-2625
Management and Budget	Tad Wille	207-8019
Mayor's Office	Mariscela Aguirre	207-8979
Municipal Court	Mary Atkinson	207-7364
Neighborhood Action	Richard Collins	207-5408
Parks and Recreation	Debbie Thompson	207-3021
Planning	Joe G. Mendoza	207-2731
Police	Rosemary Flammia	207-7340
Public Works	Jason Cosby	207-7785
Purchasing and Contract Services	Catarino Deluna	207-8386
San Antonio Metropolitan Health District	Monty McGuffin	207-8853

## VI. ADMINISTRATIVE DEPARTMENTS' PLAN

Because of the emission reductions resulting from the use of alternative fuels and the installation of vapor recovery systems at fueling facilities, the AQHAP was modified to provide more flexibility in vehicle operations. However, there are still some activities, such as the use of small gasoline-powered equipment that do not have catalytic converters, street paving, paint striping, and others, that remain prohibited on AQHADs. On AQHADs, all departments will implement the following:

- **Restrict all movement in City vehicles to an absolute minimum.**  
Use of City Motor Pool vehicles will be restricted to essential use only. Meetings requiring traveling by City vehicles are to be canceled, or implement the use of e-mail and conference calls.
- **Minimize scheduling of morning meetings between the hours of 8:00 a.m. and 9:00 a.m. when possible or teleconference.**  
Because AQHADs are declared with only one-day notice, this practice of delaying meetings should be encouraged year-round.
- **Practice appropriate vehicle operating tips.**  
For example, such as shutting off the engine when parked, avoiding excessive idling such as sitting at drive -thru's, and leaving the vehicle running while parked. Operate the vehicle only on an as-needed basis to reduce emissions. Avoid travel through known congested areas whenever possible.
- **Consider your work schedule to reflect limiting vehicle and equipment use.**  
Encourage multiple crew transports using higher occupancy rate vehicles.
- **Reschedule nonessential operations.**  
For example, lawn maintenance, tree trimming, and use of power saws, generators, etc., which include other gasoline-powered equipment.
- **Reschedule nonessential outdoor painting activities and activities requiring solvent use.**  
Postpone all solvent and paint use to evenings or on a non-Air Quality Health Alert Day.
- **Reschedule nonessential paving activities.**

Year-round, all departments will implement the following:

- 1) **Flextime:** Each Department will evaluate and implement their approved flextime policy with the purpose of minimizing congestion during peak traffic hours.
- 2) **Telecommuting:** Each Department will evaluate and implement a seasonal or year round telecommuting policy to minimize the overall number of vehicles traveling to and from City work areas.
- 3) **Service Contracts:** Department specific AQHA requirements will be incorporated into purchase and service contracts.
- 4) **Annual In-House Training:** Development of an annual training program to increase awareness of AQHAP responsibilities of Departments and employees. Placement of the AQHAP into orientation packets for new employees.

- 5) **Encourage use of public transportation and carpooling.** The City has a bus pass subsidy program and a carpool program for its employees. Call 207-6449 for more information on how to participate. Flexibility on start times will be granted to employees who ride the bus or carpool on AQHADs.
- 6) **Practice energy conservation** in City buildings, including but not limited to: turning off lights and computers and limiting air conditioning uses.
- 7) **Educational materials** on the AQHAP and air quality in general are available to all employees and customers. To request education materials or for staff assistance in presentations, please contact the Environmental Services Department at 207-6449.
- 8) Employees are encouraged to implement similar emission reduction measures at their homes.

Departments are directed to follow the plan as outlined above and to reschedule nonessential activities that result in emissions during AQHADs. Department Directors may modify this plan on a case by case basis if certain activities are essential to meet departmental goals. However, it is vital to our community that each City employee provides an example of what can and must be done to improve air quality.

## VII. DEPARTMENT SPECIFIC PLANS

The following departments will implement department-specific AQHAPs, taking into account their specialized services and goals:

**Alamodome**  
**Aviation**  
**Environmental Services**  
**Parks & Recreation**  
**Development Services**  
**Fire**  
**Police**  
**Convention Center Facilities**  
**Metropolitan Health District**  
**Public Works**  
**Purchasing**

**Note: Operations of these departments include the use of equipment that may result in significant air emissions. Specific plans are also included for departments which deliver health and public safety related services.**

### ALAMODOME

Modify or reschedule activities to assist in reducing the amount of VOC and NOx generated.

- The use of forklifts will be restricted to essential use only.
- Little to no use of vehicles and gasoline powered equipment. This will be rescheduled to non-AQHA days or only as critical needs develop.
- All gasoline powered equipment such as leaf blowers, pumps, etc. will not be utilized.



- Testing of the emergency generator will be rescheduled to non-AQHA days as needed.
- All painting activities will be rescheduled to non-AQHA or with the exception of event days.
- Notice will be provided to Alamodome clients/tenants concerning AQHA measures and advising them of recommendations to assist the City in reducing the amount of VOC and NOx generated.
- Battery powered ground equipment will be utilized on AQHA days.
- Equipment propane bottles will not be filled until after critical AQHA hours or for essential use only.
- Boilers will be banked and ran for essential use during AQHA days.

### AVIATION

- Airport Rescue & Firefighting will reschedule or delete job tasks as follows:
  - All drills and equipment testing will be rescheduled to off-peak times.
  - Housekeeping duties which involve the use of motor vehicles or motorized equipment will be rescheduled.
  - Parking shuttle buses will practice appropriate vehicle operating tips, such as shutting off the engine when parked and operating on an as-needed basis.
- Airport Maintenance will reschedule or delete job tasks as follows:
  - Except as required for compliance with Federal Aviation Regulations, mowing, trimming, and landscape activities which require the use of gasoline-powered engines will be altered to off-peak times or deleted for a cycle.
  - All exterior painting activities will be rescheduled.
  - Construction equipment and asphalt pavement placement will be scheduled for optimum air quality days.
  - Construction activities may take place during AQHADs if deemed essential.
- HVAC will suspend Freon recovery operations during AQHADs.
- Airport Police and Ground Transportation Agents will monitor curbside activities at the terminals for excessive idling of vehicles and assist with public advisories.
- Airport Operations will monitor conditions of vehicular use on the Air Operations Area of the Airport, as well as aircraft engine run-ups, and work closely with tenants to assist in control of excess emissions.
- All nonessential inspections that require vehicle use will be altered to off-peak times during AQHADs.
- Planning & Engineering will monitor construction activities and work closely with contractors to reschedule activities, reduce the use of or completely cease those functions or equipment operations which will contribute to poor air quality.
- Airport Parking will ensure all lot entries are in operation to avoid lines of idling vehicles waiting for entry. Likewise, monitor exit lane traffic and staff exit booths accordingly, to avoid excessive lines of idling vehicles waiting to exit.
- No fuel transport will be accepted for off-loading on AQHADs. All other off-loads of fuel will be limited to very early mornings or late evenings.

- Automotive shop vehicle engine test runs will be altered to off-peak times or rescheduled for a later date.

### **BUILDING INSPECTIONS**

- On AQHADs, supervisors will have an appointed number of personnel to meet them at the different service centers for the purpose of car-pooling to work.
- Supervisory personnel will transport the mail from the different service centers.
- Overtime which requires use of vehicles will be limited, except for emergencies.
- There will be no sign pickup by the Sign Section.
- There will be no bus bench ad inspections.
- Modified (flex time) reporting times will be considered for employees using public transportation.

### **CONVENTION CENTER FACILITIES**

- The Convention Facilities Department will modify or reschedule activities to assist in reducing the amount of VOC and NOx generated.
- Use of Convention Facilities' forklifts will be restricted to essential use only. As much as possible, all use will be rescheduled to non-AQHADs.
- All gasoline powered equipment such as leaf blowers, pumps, etc., will not be utilized.
- Testing of the emergency generator will not be scheduled.
- All painting activities will be rescheduled.
- All contracted services that can be rescheduled to non-AQHADs will be rescheduled.
- Notices will be provided to Convention Facilities Clients concerning AQHAD Measures and advising them on how to assist the City in reducing the amount of VOC and NOx generated emissions.
- Posting of Air Quality Health Alert notice will be posted on the marquee.

### **ENVIRONMENTAL SERVICES**

On AQHADs, the following practices will be implemented:

- Reschedule nonessential operations using gasoline-powered equipment, such as lawn mowers, edgers, blowers, power saws, tree trimmers, and generators.
- Freon extraction shall be suspended.
- Reschedule nonessential construction.
- Operation of construction and heavy equipment will be restricted to essential use.
- Personnel shall be assigned at the job site to limit travel.
- Alternate work scheduling will be implemented to allow supervisors to permit employees flex-time scheduling and telecommuting.

### **FIRE**

- Reduce the movement of nonpublic safety city vehicles, i.e., and reschedule deliveries.
- Field (tanker) refueling operations will be suspended.

- Reschedule bonfire permits.
- Reschedule control burning permits.
- Reschedule blasting permits.
- Reschedule indoor pyro and outdoor fireworks displays.
- Reschedule nonessential inspections on commercial establishments.
- Suspend starting the apparatus, engines, generators and PPVs at shift changes.
- Suspend hose practice and driving practice.
- Reschedule preventative maintenance.
- Suspend outdoor cooking.

#### **METROPOLITAN HEALTH DISTRICT**

- Outreach operations will be curtailed or deferred as much as possible, so long as the health of our clients is not compromised.
- Short notice leave requests will be considered if employees remain at home.
- Employees should remain in one location during the workday if possible.
- Bringing a lunch or walking to a nearby restaurant will be encouraged.
- Vector Control operations will be substituted with in-service training.
- All operations of Animal Control and emergency Bee Calls will be exempted.
- All employees are expected to comply with the provisions of this plan. Supervisors will be held accountable for the implementation of said plan.

#### **PARKS & RECREATION**

On AQHADs, the following operations will be suspended:

- Mowing and edging with 4-stroke cycle gasoline powered equipment with the exception of 2-stroke cycle equipment that uses a tier 2 engine.
- Spraying of insecticides and herbicides.
- Mixing, paving, and street patching in parks with hot asphalt concrete.
- Nonessential construction and heavy equipment use.
- Graffiti removal by spraying.
- Parking lot striping and sign painting by spraying.
- Non-essential 4-cycle mowing equipment or engines.

#### **POLICE**

Each Division ensures that all Units within the Division have an AQHAP that will be implemented upon notification of an AQHAD. Unit AQHAP's are formulated to the activities of each individual Unit.

Individual Unit AQHAP's should include items from the following:

- Reduce use of nonemergency vehicles
- Reschedule nonessential operations
- Enforce polluting vehicle ordinances or statutes (Uniform Division)
- Curtail use of Police Department Fleet

- Driver training for cadets and in-service will be delayed until 9:00 a.m. on AQHADs.

### **PUBLIC WORKS**

On AQHADs, the following practices will be implemented:

- Reschedule nonessential operations using gasoline-powered equipment, such as lawn mowers, edgers, blowers, power saws, tree trimmers, and generators.
- Reschedule street striping and other painting activities.
- Reschedule graffiti removal activities.
- Reschedule nonessential construction.
- Field (tanker) refueling operations will be suspended during AQHADs.
- Operation of construction and heavy equipment will be restricted to essential use.
- Personnel shall be assigned at the job site to limit travel.
- In-house paving operations and mixing of hot asphalt concrete will be suspended.
- Spraying of insecticides will be suspended.
- Crews will be reassigned to various manual tasks such as erecting signs, site cleanup, etc.

### **PURCHASING**

- The use or operations of gasoline driven lawn mowers, edgers, blowers, power saws, generators, etc., will be prohibited. Repairs to such equipment may be undertaken but testing will be delayed until the advisory has been lifted.
- Idling of vehicles or equipment being repaired or serviced will be kept to an absolute minimum. Only public safety vehicles (Police & Fire) will be road tested.
- Motor Pool vehicles will only be issued to drivers that have been cleared to perform essential duties.
- Meetings which require the movement of personnel by vehicle will be re-scheduled to begin not earlier than 10:00 a.m.
- Painting on vehicles or equipment will be strictly prohibited.
- For vehicles assigned to each division, travel will not be initiated without the approval of the DEA. Request for such travel must be justifiable as essential to operations.
- Approved travel will be restricted to the essential function justified only.
- Idling of vehicles during approved travel must be kept to the absolute minimum. Under no circumstances will vehicles be left idling for the sole purpose of keeping the vehicle cool through use of the air conditioning system.
- The use of gasoline engine driven compressors to power pneumatic tools on service vehicles will be closely monitored by section supervisors. Except for tasks requiring impact wrenches, compressors will not be started.

## **VIII. EXISTING CITY OF SAN ANTONIO LONG-TERM ACTIONS TO REDUCE EMISSIONS**

The City of San Antonio has implemented a number of programs to reduce adverse impacts of emissions on air quality. The following programs have the long-term benefit of providing a cleaner year-round operation while allowing for an enhanced level of service to the community.

### **Ultra-low Sulfur Diesel**

- Implemented voluntary introduction of an ultra low sulfur diesel for the City's and off-road diesel vehicles

### **Air Improvement Resources (AIR) Committee**

- The City of San Antonio in partnership with Bexar County, Alamo Area Council of Governments, and the Metropolitan Planning Organization coordinates policy, technical, and outreach issues for the San Antonio area.

### **Public Education and Outreach**

- Work with area governmental entities and local media to develop outreach programs

### **Fuel Facilities Upgrade**

- Stage I Vapor Recovery Systems (VRS) are in place on the underground gasoline storage tanks at all City fueling facilities to enable recycling of fumes from the underground storage tank back to the tanker truck .
- Stage II VRS are in place on gasoline dispenser pumps at all nine eligible fueling facilities to allow for recovery of gasoline vapors from vehicle refueling. The vapors are recycled back to the underground storage tank.

### **Ozone Season Refueling Plan and City Motor Pool Operations**

- The installation of Stage I and Stage II VRS, all vehicles, gasoline, diesel, and propane, were allowed to refuel at all facilities without restrictions. All employees were strongly encouraged to refuel after 3 PM the day before an AQHAD episode.
- During AQHADs, City motor pool vehicles are issued only to drivers cleared to perform essential duties by their Department Director, Assistant Director or Daniel V. Cardenas, Director of Environmental Services Department.

### **Emissions Testing**

- The Purchasing Department implements a modified Inspection & Maintenance (I/M) Program using a four-gas emissions analyzer. All vehicles are tested by the I/M Program during the annual safety inspection. Any identified problems are corrected and the vehicle is re-tested.

### **Employee Bus Pass Program**

- To encourage employee bus ridership, the City has a bus pass subsidy program for its employees.

- The Motor Pool has Monthly Bus Passes for use by employees as an alternative to using Motor Pool vehicles.

**Flextime Policy**

- The City has implemented a flextime policy for all employees. Department Director's shall implement their individual flextime programs for their employees.

**Synchronization Program and Energy Efficiency Measures for Traffic Signals**

- There are approximately 1,100 signalized intersections, 68% in coordinated mode and within the last five years, all have been retimed with help from the Governor's Energy Management Center & TxDOT using the Oil Overcharge Restitution Act. The City matched funds of \$2,068,460 from 9 grant programs which were used to upgrade the existing signal system.
- In 2004 the City installed high-efficiency LED traffic signals for 1096 traffic intersections.

**Preservation of Trees**

- The City's Landscape and Tree Preservation Ordinance attempts to preserve existing trees, encourage the planting of new trees, and encourage responsible development. The City's Arborist can provide information on trees beneficial to air quality.

**Green Building Policy**

- Policy commits future City commercial-type buildings be designed and constructed according to economical and technically feasible high performance building concepts including: energy efficiency, green building guidelines
- The basis of the Policy guidelines will utilize the standards and requirements of the Silver Level under the U.S. Green Building Council's LEED rating system

**Hybrid Taxi Ordinance**

- This program offers additional taxicab permits based on the implementation of hybrid vehicles for taxicab fleets. Failure to implement this change to the City Code will limit taxi companies to the operation of older internal combustion engine taxicabs without incentives to utilize more environmentally friendly hybrids.

**Free Downtown Hybrid Parking**

- Vehicles displaying an authorized vehicle placard are allowed to park free at any downtown parking meter.